**Boring Designation** CCR-1-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-1-88 N 374874.9389 E 2321412.559 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/26/88 9/26/88 16. ELEVATION TOP OF BORING -32' MLLW 6. THICKNESS OF OVERBURDEN 30.7 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 62.7 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32 0': CLAY (CH), high plasticity; fine; dark gray to USCS gray, wet, high plasticity, some sand, and shell fragments, slightly calcareous. 0 1 2 6 10.5': Trace shell fragments. 0 5 3 0 16.5': Trace sand. 4 0 -50.5 18.5 NOTE: Fishtailed from 50.5' to 61.2' 18.5': Fishtailed **-**61.2≢29.2 29.2': SILTY CLAY (CL), high plasticity; light 5 70 greenish brown, moist, high plasticity, trace sand, <u>-62.7</u> 30.7 calcareous. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -62.7 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CCR-10-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-10-89 N 374022.2651 E 2323117.644 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 6/5/89 6/5/89 16. ELEVATION TOP OF BORING -39.7' MLLW 6. THICKNESS OF OVERBURDEN 14.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39.7\_ 0': CLAY (CH), high plasticity; gray, very moist, high USCS plasticity, with sand, and shell fragments. 0 2.5': With sand. 3': Some shell fragments. 0 2 5 0 5 7': With shell fragments, and sand. 3 4 -48.7 9.0 9': No recovery 7  $-50.0 \pm 10.3$ 10.3': CLAY (CH), high plasticity; gray, very moist, Poor recovery 50.1' to 51.6' high plasticity, with shell fragments, and sand. 7 4 12 5 22 -54.6‡14.9 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-11-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL N 373300.3516 E 2323486.749 CCR-11-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/24/89 5/24/89 16. ELEVATION TOP OF BORING 42.2' MLLW 6. THICKNESS OF OVERBURDEN 12.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING -29.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.2\_ 0': CLAY (CH), high plasticity; fine to medium; blue USCS green, high plasticity, with shell fragments, and sand. 0 9 1 2 10 2 8 8 **10':** Wet, soupy. 14 11.2': Shells, and shell fragments, some ML "balls" in shoe of splitspoon. 3 14 12.7 29.5 BOTTOM OF BOREHOLE AT 29.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-12-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-12-89 N 372051.8703 E 2326200.874 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/4/89 6/4/89 16. ELEVATION TOP OF BORING -43.3' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.3\_ 0': CLAY (CH), soft; high plasticity; dark gray, wet, USCS high plasticity. 1 0  $-45.3 \pm 2.0$ 2': SILT (ML), low plasticity; olive green, moist, low plasticity, calcareous. 22 30 22 6': With shell fragments. 3 20 14 17 20 4 <u>-55.3  $\pm$  1</u>2.0 BOTTOM OF BOREHOLE AT -55.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-13-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 373150.6778 E 2325298.721 CCR-13-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/11/90 2/11/01 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.6\_ 0': SILTY SAND (SM), fine to medium; dark gray, USCS wet, with shell fragments. 0 1 2 5 -44.6 3.0 3': CLAY (CL), low plasticity; olive green, moist, low plasticity, calcareous. 3 24 4.5': Trace sand. 4 18 6': Some sand. 5 14 6 18 7 15 8 14 9 16 -55.1 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.1 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-14-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-14-90 N 372478.8011 E 2325881.814 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/11/90 2/11/90 16. ELEVATION TOP OF BORING -40.8' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -43.5 2.7 2 2.7': CLAY (CL), low plasticity; olive green, moist, 2 low plasticity, calcareous. 3 14 4.5': Trace sand. 4 19 5 23 7.5': Some sand. 6 16 7 15 8 16 9 17 21 10  $-55.8 \pm 15.0$ BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-15-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-15-90 N 372088.9397 E 2326594.857 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/12/90 2/12/90 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 1 -44.7 2.6 2.6': CLAY (CL), low plasticity; olive green, moist, 2 3 low plasticity, trace sand, calcareous. 3 14 4 19 5 22 6 15 7 16 10.5': `, some sand. 8 15 9 14 <u>-55.6</u> 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-16-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-16-90 N 372360.8684 E 2326239.823 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/8/90 4/8/90 16. ELEVATION TOP OF BORING -38.4' MLLW 6. THICKNESS OF OVERBURDEN 16.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.4 0': CLAY (CH), high plasticity; dark gray, high USCS plasticity, soupy. Weight of rods drove splitspoon from 38.4' to 44.6'. Pulled tools, then took next drive. Sample #1 taken off rods. 1 0 5.2': Wet. 2 0 -44.1± 5.7 5.7': SAND (ML), low plasticity; I; olive green, moist, 3 0 low plasticity, with shell fragments, calcareous. 4 18 5 20 6 14 7 14 8 14 9 15 10 14 <u>-55</u>.1∃ -1<u>6.7</u> BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.1 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-17-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-17-90 N 373621.2238 E 2322817.717 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/10/90 4/10/90 INCLINED 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': SAND (SP), fine to medium; light gray, Poorly USCS Graded, wet, with shell fragments. 1 20 -43.4 1.5 1.5': SILTY SAND (SM), fine; light gray, with shell fragments. 2 51 -44.9 3.0 3': SAND (SP), fine to medium; light gray, Poorly Graded, wet, with shell fragments. 3 64 4 54 5 36 7.5 -49.4 7.5': SILT (ML), low plasticity; olive green, moist, low plasticity, calcareous. 6 14 7 22 8 24 9 26 -55.4 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-18-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-18-90 N 374214.1966 E 2322762.624 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/9/90 4/9/90 -36.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 18.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -36.3 0': CLAY (CH), high plasticity; dark gray, high USCS plasticity, soupy. 0 1 8.2': Fine to medium; gray, moist, quartz. 2 0 9.2': With shell fragments. 3 2 12.2': With shell fragments. 2 4 13.7': With shell fragments, and rock fragments. 5 3 15.5': Wet, shell fragments, and rock fragments. 6 4 7 <u>-54.0 ‡ 17.7</u> -54.5 18.2 17.7': SAND (SP), fine to medium; light gray, Poorly 8 18 Graded, wet, with shell fragments. BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -54.5 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CCR-2-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-2-88 N 374525.0291 E 2321865.601 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/16/88 9/26/88 16. ELEVATION TOP OF BORING -43.2' MLLW 6. THICKNESS OF OVERBURDEN 15.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.8 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.2-0': CLAY (CH), high plasticity; dark gray to black, USCS wet, high plasticity, trace sand. 1 0 <u>-52.0</u> ‡ 8.8 8.8': CLAYEY SAND (SC), fine to medium; greenish 2 NOTE: Fishtailed from 52.4' to 57.3; 0 -52.6 9.4 gray, trace shell fragments. 9.4': Fishtailed. <u>-57.3</u> 14.1 14.1': SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, trace sand, 3 33 calcareous. <u>-58.8 <sup>‡</sup> 15.6</u> BOTTOM OF BOREHOLE AT -58.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-3-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-3-88 N 373472.2678 E 2323041.735 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/17/88 9/27/88 INCLINED 16. ELEVATION TOP OF BORING -42.7' MLLW 6. THICKNESS OF OVERBURDEN 14.4' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.1 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS **ELEV** DEPTH Samp **REMARKS** RQD % REC (Description) -42.7 0': CLAYEY SAND (SC), fine to medium; gray, wet, USCS some shell fragments. 1 19 24 -45.7干 3.0 3': SILTY SAND (SM), fine; gray to light gray, wet, some shell fragments, slightly calcareous. 00/0.9 2 00/0. -48.9 6.2 6.2': Fishtailed 3 00/0. NOTE: Fishtailed from 49.9' to 55.6' 12.9 -55.6 12.9': CLAYEY GRAVEL SILTY SAND (CL), low plasticity; light greenish brown, moist, low plasticity, 4 41 some sand, calcareous. -57.1 + 14.4 BOTTOM OF BOREHOLE AT -57.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CCR-4-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-4-88 N 372496.6974 E 2325302.8271 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 5 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 9/27/88 9/27/88 INCLINED 16. ELEVATION TOP OF BORING -41.5' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.5= 0': FAT CLAY (CH), dark gray to black, wet, trace USCSWeight of rods drove splitspoon fine sand, and shell fragments. from 41.5' to 46.0'. 1 0 -45.5 4.0 2 0 4': CLAYEY SAND (SC), fine to medium; dark gray, -46.0 4.5 wet, some shell fragments. 3 6 4.5': FAT CLAY (CH), greenish gray, moist, some fine to medium sand, and shell fragments. 11 **-49.0**  $\pm$  **7.5** 7.3': Light brown, some clay strata or lenses, with -50.0 8.5 -50.5 9.0 4 6 sand strata or lenses. 5 6 7.5': CLAYEY SAND (SC), fine to medium; gray, BLOWS PER FOOT: Number required wet, some shell fragments, slightly calcareous. to drive 1-3/8"ID splitspoon w/140 lb. 8.5': SILTY LEAN CLAY (CL), light greenish brown, hammer falling 30". moist, trace fine sand, calcareous. BOTTOM OF BOREHOLE AT -50.5 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CCR-5-88

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DRILLING L	<b>-</b> 0G	South Atlantic Divis	sion	С	Charl	lesto	n H	arbor	OF '	l sh	IEETS
1. PROJECT				9. C	OOR	DINA	TE S\	YSTEM	: VERTI	CAL	
Charleston Har	bor Enti	rance Channel Deepe	ening	S	State	Pla	ne -	South Carolina NAD83	<u> </u>	ILLW	1
				10.	SIZE	AND	TYPE	EOF BIT 1-3/8" Splitspoon w	/ 5-1/2" Fi	shtai	ı
2. HOLE NUMBER	LO	CATION COORDINATES					_	ER'S DESIGNATION OF DRILL			
CCR-5-88	1	N 372772.8473 E 23	26187.7572	F	ailin	ıg 31	14	_			
3. DRILLING AGENCY				12.	TOTA	L SA	MPLE	S DISTURBED	UNDIST	URBEI	D
U.S. Corps of E	Inginee	rs - Savannah District					3	: 3	:	0	
4. NAME OF DRILLER				13.	TOTA	L NU	MBER	R CORE BOXES 0			
C.D. Justiss 5. DIRECTION OF BO	DING	: DEG FROM :	BEARING	14.	ELEV	'ATIO	N GR	OUND WATER NA			
VERTICAL INCLINED	VERTICAL					BOF	RING	STARTED 9/28/88	COMPLETE 9/28	D 3/88	
6. THICKNESS OF OV	THICKNESS OF OVERBURDEN 7.5'			16.	ELEV	'ATIO	N TO	P OF BORING -42.4' MLL	W		
7 DEDTH DOILLED IN	DEPTH DRILLED INTO ROCK  0'			17.	TOTA	L CC	RE R	ECOVERY FOR BORING N/A			
7. DEFIN DRILLED IN	IIO KOCK	· U		18.	SIGN	ATUF	RE AN	ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF I	BORING	49.9'			J	ame	s Ar	rthur, Geologist			
ELEV DEPTH B		FIELD CLASSIFICATION OF (Description)	F MATERIALS		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-42.4	<b>0':</b> SILT moist, s	Y LEAN CLAY (CL), light ome fine sand, calcareou	greenish brown, s.			1		USCSNOTE: Weight of roads sampler from 42.4' to 43.9'.	pushed		0
	1.5': Trace sand.					2					8
											28
											31
-49.9 7.5	0.9± 7.5										26

BOTTOM OF BOREHOLE AT -49.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** CCR-6-88

Charleston Harbor Entrance Channel Deepening  State Plane - South Carolina NAD83 MLLW  10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail  2. HOLE NUMBER LOCATION COORDINATES CCR-6-88 N 372465.9747 E 2326850.7885  3. DRILLING AGENCY LISTON OF SOURCE Selection of Control of Carolina Shape								Boring Designation	CCR-	<u>-6-88</u>	
1. PROJECT Charleston Harbor Entrance Channel Deepening 2. HOLE NUMBER 2. HOLE NUMBER 3. CORTIONATE SYSTEM 4. State Plane - South Carolina NAD83   MILLW 4. NAME Plane - South Carolina NAD83   MILLW 4. NAME OF BRILLER C.C. 1. Substitut 4. NAME OF BRILLER C.D. Justiss 5. DIRECTION OF BORING   DEG FROM   BEARING   INCLINED   INCLINED   INCLINED   4. NAME OF DIRLLED INTO ROCK   O'   Inclined   In	DRILLING LOC	_ [	DIVISION	INS	STALL	ATIO	N		SHE	ΞT	1
State Plane - South Carolina NAD83   MLLW	DRILLING LOC	<b>.</b>	South Atlantic Division	(	Char	lesto	on H	arbor	OF	1 s <sub>+</sub>	IEETS
2. HOLE NUMBER CCR-6-88 N 372465.9747 E 2326850.7885 I 11. MANUFACTURER'S DESIGNATION OF DRILL Failing 314  3. DRILLING AGENCY U.S. Corps of Engineers - Savannah District 2 2 2 0  4. NAME OF DRILLER C.D. Justiss 5. DISCRICION OF BORING WERTICAL VERTICAL NUMBER CORE BOXES 0  5. DIRCTION OF BORING WERTICAL VERTICAL SHOPE OF BORING STARTED 9/28/88 9/28/88  6. THICKNESS OF OVERBURDEN 10.5' 16. ELEVATION TOP OF BORING -44' MLLW  7. DEPTH DRILLED INTO ROCK 0' 17. TOTAL CORE RECOVERY FOR BORING N/A  8. TOTAL DEPTH OF BORING 54.5' James Arthur, Geologist  ELEV DEPTH 0F BORING 54.5' James Arthur, Geologist  1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, Geologist  9. PETH 0F James Arthur, Geologist  1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, Geologist  9. PETH 0F James Arthur, Geologist  1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, Geologist  9. PETH 0F James Arthur, Geologist  1. James Arthur, Geologist  2. James Arthur, Geologist  3. DISTURBED UNDISTURBED UNDISTURBED 1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, Geologist  1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, Geologist  9. PETH 0F James Arthur, Geologist  1. James Arthur, Geologist  1. James Arthur, Geologist  2. James Arthur, Geologist  3. DISTURBED UNDISTURBED 1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, Geologist  1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  1. James Arthur, Geologist  2. James Arthur, Geologist  3. DISTURBED 1. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. Ja	1. PROJECT			1							
2. HOLE NUMBER CCR-6-88 N 372465.9747 E 2326850.7885  DRILLING AGENCY U.S. Corps of Engineers - Savannah District  12. TOTAL SAMPLES DISTURBED UNDISTURBED 2 2 0  4. NAME OF DRILLER C.D. JUSISIS  5. DIRECTION OF BORING PERTICAL NCINED 15. DATE BORING 15. DATE BORING 15. DATE BORING 15. DATE BORING 16. ELEVATION TOP OF BORING 17. TOTAL CORR RECOVERY FOR BORING 18. TOTAL DEPTH OF BORING 19. FIELD CLASSIFICATION OF MATERIALS (Description)  10. CLAYEY FINE SAND (SC), dark gray and light brown, wet.  91. SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.  11. MANUFACTURER'S DESIGNATION OF DRILL Failing 314  12. TOTAL SAMPLES DISTURBED UNDISTURBED 12. TOTAL SAMPLES DISTURBED UNDISTURBED 13. TOTAL NUMBER CORE BOXES 0 14. ELEVATION GROUND WATER NA 15. DATE BORING 16. ELEVATION TOP OF BORING 16. ELEVATION TOP OF BORING 17. TOTAL CORE RECOVERY FOR BORING 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  10. USCSNOTE: weight of rods drove splitspoon from 44.0' to 53.0'.  10. USCSNOTE: weight of rods drove splitspoon from 44.0' to 53.0'.  10. USCSNOTE: weight of rods drove splitspoon from 44.0' to 53.0'.  10. USCSNOTE: weight of rods drove splitspoon from 44.0' to 53.0'.	Charleston Harbor	Entra	nce Channel Deepening		State	Pla	ne -	South Carolina NAD83		MLLW	/
CCR-6-88   N 372465.9747   E 2326850.7885   Failing 314				10.	SIZE	AND	TYPE	OF BIT 1-3/8" Splitspoon w/ !	5-1/2" F	ishtai	l
3. DRILLING AGENCY U.S. Corps of Engineers - Savannah District 12. TOTAL SAMPLES 2 2 0  13. TOTAL NUMBER CORE BOXES C.D. Justiss 5. DIRECTION OF BORING VERTICAL INCLINED 15. DATE BORING VERTICAL INCLINED 16. ELEVATION TOP OF BORING 7. DEPTH DRILLED INTO ROCK O' 17. TOTAL CORE RECOVERY FOR BORING NICH DEPTH OF BORING 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  19. SIATY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.  12. TOTAL SAMPLES 2 2 0  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  15. DATE BORING STARTED 9/28/88 9/28/88 9/28/88  16. ELEVATION TOP OF BORING N/A 17. TOTAL CORE RECOVERY FOR BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  19. SUCCINCTE: weight of rods drove splitspoon from 44.0' to 53.0'.	2. HOLE NUMBER					-	_	R'S DESIGNATION OF DRILL			
U.S. Corps of Engineers - Savannah District  4. NAME OF DRILLER C.D. Justiss  5. DIRECTION OF BORING VERTICAL INCLINED  6. THICKNESS OF OVERBURDEN  7. DEPTH OF BORING BEARING  8. TOTAL DEPTH OF BORING DEPTH OF BORING  O"  8. TOTAL DEPTH OF BORING DEPTH OF BORING O"  FIELD CLASSIFICATION OF MATERIALS (Description)  O": CLAYEY FINE SAND (SC), dark gray and light brown, moist, trace fine sand, calcareous.  9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.		: N	372465.9747 E 2326850.7885	_							
4. NAME OF DRILLER C. D. Justiss 5. DIRECTION OF BORING VERTICAL INCLINED 15. DATE BORING 15. DATE BORING 17. TOTAL CORE RECOVERY FOR BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST  4. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST N/A 19. ELEVATION TOP OF BORING N/A 11. ELEVATION TOP OF BORING N/A 18. SIGNATURE AND TITLE OF INSPECTOR JAMES ARTHUR, GEOLOGIST N/A 19. ELEVATION TOP OF BORING N/A 19. ELEVATION TOP OF BORING N/A 19. TOTAL CORE RECOVERY FOR BORING N/A 19. TOTAL CORE RECOVERY FOR BORING N/A 19. ELEVATION TOP OF BORING N/A	• · · · · · · · · · · · · · · · · · · ·		0 1 10:	12.	TOTA	AL SA		•	UNDIS		D
C.D. Justiss 5. DIRECTION OF BORING VERTICAL VERTICAL VERTICAL 15. DATE BORING 9/28/88 9/28/88 6. THICKNESS OF OVERBURDEN 10.5' 7. DEPTH DRILLED INTO ROCK 0' 8. TOTAL DEPTH OF BORING 54.5'  DEPTH OF BORING (Description)  OF: CLAYEY FINE SAND (SC), dark gray and light brown, wet.  14. ELEVATION OR ROUND WATER NA 15. DATE BORING STARTED 9/28/88 9/28/88  16. ELEVATION TOP OF BORING -44' MILLW  17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR  James Arthur, Geologist  OF: CLAYEY FINE SAND (SC), dark gray and light brown, wet.  16. ELEVATION TOP OF BORING N/A  17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR  James Arthur, Geologist  OF: CLAYEY FINE SAND (SC), dark gray and light brown, wet.  17. TOTAL DEPTH OF INSPECTOR  James Arthur, Geologist  OF: CLAYEY FINE SAND (SC), dark gray and light brown, moist, trace fine sand, calcareous.		neers	- Savannah District					<del>_</del>		0	
S. DIRECTION OF BORING   DEG FROM VERTICAL   STARTED   START				13.	TOTA	AL NU	IMBE	R CORE BOXES 0			
VERTICAL INCLINED 15. DATE BORING STARTED 9/28/88 9/28/88 9/28/88  6. THICKNESS OF OVERBURDEN 10.5'  7. DEPTH DRILLED INTO ROCK 0'  8. TOTAL DEPTH OF BORING 54.5'  FIELD CLASSIFICATION OF MATERIALS (Description)		<u>`</u>	DEC EDOM : BEADING	14.	ELEV	/ATIC	N GR	OUND WATER NA			
6. THICKNESS OF OVERBURDEN 10.5'  7. DEPTH DRILLED INTO ROCK  8. TOTAL DEPTH OF BORING  FIELD CLASSIFICATION OF MATERIALS (Description)  O': CLAYEY FINE SAND (SC), dark gray and light brown, wet.  9728/88 :		,		45	DATE	- 00	INO	STARTED C	OMPLET	ED	
7. DEPTH DRILLED INTO ROCK  0'  8. TOTAL DEPTH OF BORING  FIELD CLASSIFICATION OF MATERIALS (Description)  17. TOTAL CORE RECOVERY FOR BORING  18. SIGNATURE AND TITLE OF INSPECTOR  James Arthur, Geologist  REMARKS  18. SIGNATURE AND TITLE OF INSPECTOR  James Arthur, Geologist  19. CLAYEY FINE SAND (SC), dark gray and light brown, wet.  10. SIGNATURE AND TITLE OF INSPECTOR  18. SIGNATURE AND TITLE OF INSPECTOR  19. SIGNATURE AND TITLE OF INSPECTOR  10. SIGNATURE AND TITLE OF INSPECTOR	☐ INCLINED					BOF	KING	9/28/88	9/2	28/88	
8. TOTAL DEPTH OF BORING  8. TOTAL DEPTH OF BORING  9. CLAYEY FINE SAND (SC), dark gray and light brown, wet.  9. SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	6. THICKNESS OF OVERB	THICKNESS OF OVERBURDEN 10.5'					N TO	P OF BORING -44' MLLW			
8. TOTAL DEPTH OF BORING 54.5'  ELEV DEPTH OF BORING 54.5'  FIELD CLASSIFICATION OF MATERIALS (Description)  O': CLAYEY FINE SAND (SC), dark gray and light brown, wet.  O': CLAYEY FINE SAND (SC), dark gray and light brown, wet.  10.5  9.0  9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	7 DEDTH DRILLED INTO E						RE R	ECOVERY FOR BORING N/A			
ELEV DEPTH OF THE SAND (SC), dark gray and light brown, wet.    Continue of the sand of th	7. DEPTH DRILLED INTO P	<b>~</b>			SIGN	IATUF	RE AN	ID TITLE OF INSPECTOR			
-44	8. TOTAL DEPTH OF BORI	ING	54.5'		J		s Ar	thur, Geologist			
-44		FI	ELD CLASSIFICATION OF MATERIALS		0/	Š.				t /s/	lne
-44	TELEV   DEPTH   協				REC	dme	8%	REMARKS		3lov 0.5	-\ -\
brown, wet.  1  9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.		CL AVE	CV FINE CAND (CC) down many and light			ιχ	<u> </u>	LICCONOTE: weight of so do dea		-	Z
-53.0 9.0 9.0 9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	T 7/9//9 U.								ve		
-53.0 9.0 9: SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.		, , , ,						Spinspoori II offi +4.0 to 00.0 :			
-53.0 9.0 9: SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.											
-53.0 9.0 9: SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	<b>1</b>										
-53.0 9.0 9: SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	<b>*///</b> *										
9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.						1					0
9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.											
9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	<b>1 1 1 1 1 1 1 1 1 1</b>										
9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.											
9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.											
9': SILTY LEAN CLAY (CL), light greenish brown, moist, trace fine sand, calcareous.	<b> </b>										
moist, trace fine sand, calcareous.											
-54.5 = 10.5 mioist, trace line sand, calcareous.	+ //// ma	SILTY	LEAN CLAY (CL), light greenish brown,			2					2
	-54.5 10.5	moist, trace fine sand, calcareous.						BLOWS PER FOOT: Number re			لتا

BOTTOM OF BOREHOLE AT -54.5 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** CCR-7-88

								Boring Designation	CCR-	-00	
DRILLING I	00	DIVISION		INS	STALL	ATIO	N		SHEE	Γ	1
DKILLING	LUG	South Atlantic Div	rision	(	Char	lesto	n H	arbor	OF 1	l sh	EETS
1. PROJECT								YSTEM	: VERTI		
Charleston Hai	rbor Enti	rance Channel Deep	ening	3	State	Pla	ne -	South Carolina NAD83	N	ILLW	1
				10.	SIZE	AND	TYPE	OF BIT 1-3/8" Splitspoon w/	5-1/2" Fi	shtai	ı
2. HOLE NUMBER		CATION COORDINATES		11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL			
CCR-7-88		N 371793.0182 E 23	326986.8946		ailir						
3. DRILLING AGENCY				12.	TOTA	AL SA		•	UNDIST		)
		rs - Savannah Distric	:t				3	3		0	
4. NAME OF DRILLER C.D. Justiss	2			13.	TOTA	AL NU	IMBER	R CORE BOXES 0			
5. DIRECTION OF BO	PING	DEG FROM	BEARING	14.	ELEV	/ATIO	N GR	OUND WATER NA			
	VERTICAL VERTICAL INCLINED					BOF	RING	STARTED 9/29/88	COMPLETE 9/29	D 9/88	
6 THICKNESS OF OV	THICKNESS OF OVERBURDEN 7.5'				ELEV	/ATIO	N TO	P OF BORING -42.5' MLL	W		
	• • • • • • • • • • • • • • • • • • • •				TOTA	AL CC	RF R	ECOVERY FOR BORING N/A			
7. DEPTH DRILLED IN	NTO ROCK	0'						ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF	BORING	50'		10.				rthur, Geologist			
ELEV DEPTH G		FIELD CLASSIFICATION (Description)			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-42.5  O': FAT CLAY (CH), dark gray to brownish blac wet.						1		USCSNOTE: Weight of rods p sampler from 42.5' to 45.5'.	ushed		0
	3': SILTY LEAN CLAY (CL), light greenish brown moist, trace fine sand, calcareous.					2					5
											29
-50.0 7.5	50.0 7.5					3					30

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** CCR-8-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES CCR-8-88 N 372121.135 E 2327689.821 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/28/88 9/28/88 16. ELEVATION TOP OF BORING -41' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) USCS 0': SILTY SAND (SM), fine to medium; light brown, wet, trace of dark grey clayey sand, calcareous. 0 1 -44.0 3.0 3': SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, some sand, calcareous. 2 7 4.5': Trace sand. 20 18 3 29 -50.0+ 9.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** CCR-9-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CCR-9-89 N 373696.1751 E 2322554.713 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 5/23/89 5/23/89 16. ELEVATION TOP OF BORING -41.4' MLLW 6. THICKNESS OF OVERBURDEN 13.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.4\_ 0': CLAYEY SILT (MLo), low plasticity; olive green, USCS low plasticity, with shell fragments. 0 25 1 17 19 2 21 18 8.7': Some sand. 23 16 3 30 -55.0 <del>+</del> 13.6 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** CHDVC-1-1-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-1-1-88 N 364458.4176 E 2328141.068 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 8/20/86 8/20/86 INCLINED -36.9' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 18.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -36.9 0': CLAYEY SAND (SC), fine; gray, and shell fragments. -38.0 \_ 1.1 Start Time: 12:45 1.1': CLAYEY SAND (SC-SM), fine; gray, with clay Stop Time: 12:50 strata or lenses. 1 -41.5 🕇 4.6 4.6': SAND (SP), fine; gray. -42.4 5.5 5.5': SILTY SAND (SM), fine to medium; gray, with clay strata or lenses, and sand strata or lenses. 2  $-47.7 \pm 10.8$ 10.8': SAND (SP), fine to medium; gray, with shell fragments. -48.9<u>+</u> 12.0 12': CLAYEY SAND (SC), medium; gray, with shell -49.5 ‡ 12.6 fragments, and rock fragments. 3 12.6': CLAYEY ORGANIC SILT (MH), gray, with sand strata or lenses. -53.2 16.3 16.1': Clay strata or lenses, and sand strata or 16.3': SILTY SAND (SP-SM), fine; gray. 4 -55.4±18.5 BOTTOM OF BOREHOLE AT -55.4 ft Charleston Harbor & Entrance Channel

**Boring Designation** CHDVC-10-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-10-1-1-86 : N 378039.3987 E 2318886.138 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 8/4/86 8/4/86 16. ELEVATION TOP OF BORING -26.6' MLLW 6. THICKNESS OF OVERBURDEN 17.6 17. TOTAL CORE RECOVERY FOR BORING 87% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 44.2 N/A N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -26.6 0': CLAYEY SAND (ML), black, with sand, and organics. Start Time: 8:37 Stop Time: 8:37 1 Penetrometer - 0.10 TSF 2 Penetrometer - 0.10 TSF -38.8 + 12.212.2': CLAYEY SILT (MH), gray, with organics, and 3 Penetrometer - 0.25 TSF -43.0<sup>±</sup> 16.4 16.4': SILTY CLAYEY SAND (SC-SM), fine; olive, calcareous (Cooper Marl). 4 -44.2<sup>±</sup> 17.6 Penetrometer - 2.75 BOTTOM OF BOREHOLE AT -44.2 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-11-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT : LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL N 375625.7711 E 2320586.465 OSI Model 1500 Vibracore CHDVC-11-1-1-86 : 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/2/86 8/2/86 16. ELEVATION TOP OF BORING -35.1' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.1-0': CLAYEY SILT (MH), gray. USCS 1 Start Time: 10:16 Stop Time: 10:20 -37.2 2.1 Penetrometer - 0.25 TSF 2.1': SILTY SAND (SP-SM), fine; gray, 1/8" to 1/2" thick lenses of clay occurring at 1/2" to 5" spacing. 2 -42.9 ‡ 7.8 7.8': CLAYEY SILT (MH), gray. 3 Penetrometer - 1.75 TSF 4  $-55.1 \pm 20.0$ BOTTOM OF BOREHOLE AT -55.1 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-12-1-1-86

	DIVISION					N.I.	Dorning	Designation			
DRILLING L	DRILLING LOG South Atlantic Division					N on H	arbor		SHEE OF		1 IEETS
1. PROJECT	har Entre	anas Channal Das	-	COOR				olina NAD83	VERT	ICAL <b>/ILLW</b>	ı
Chanesion Har	DOI ENIIA	ance Channel Dee					OF BIT	Olina NADOS	<u>: ''</u>	VILLVV	
2. HOLE NUMBER		ATION COORDINATES						ATION OF DRILL			
CHDVC-12-1-1 3. DRILLING AGENCY	<del>,                                    </del>	372898.4155 E 2		2. TOT/			500 Vibrace	DISTURBED	UNDIST	URBEI	D
Ocean Surveys						5		5		0	
4. NAME OF DRILLER DMB			<u> </u>				R CORE BOXI				
5. DIRECTION OF BO	RING	DEG FROM VERTICAL	BEARING					RTED	COMPLETI	ED	
INCLINED			<u>:</u>	5. DATE				8/2/86		2/86	
6. THICKNESS OF OV			<u> </u>				P OF BORING	-42.6' M			
7. DEPTH DRILLED IN		0'		8. SIGN	IATUI		ND TITLE OF I		70		
8. TOTAL DEPTH OF I	BORING	62.6'		1	√A 	1	1			_	Φ
ELEV DEPTH GENERAL STATES	F	TELD CLASSIFICATION (Descriptio		% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-42.6	0': SAND fragment	(SP), medium; black	with shell		1		USCS				
	nagment	<b>.</b>				-	Start Time:				
							Stop Time:	9:18			
-45.2 2.6	<b>2.6'</b> : CLA	YEY SILT (MH), gray									
1 ±											
40.4					2	-					
-49.1 ± 6.5 ±	<b>6.5'</b> : SILT	Y SAND (SP-SM), m	edium; dark gray,		3						
	with shell	fragments.			3						
-51.0 8.4	0.41.011.7	TV CAND (CD) fines	una e e e e e e e e e e e e e e e e e e e								
	and clay.	TY SAND (SP), fine; g	ray, with organics,								
I <sup>∓</sup>					4						
-53.9 11.3	11.3': SIL	TY CLAYEY SAND (	SM), fine; olive, with								
	rock fragi	ments, calcareous (Co	ooper Marl).								
					5						
-62.6 <del>  2</del> 0.0	BOTTOM	1 OF BOREHOLE AT	-62.6 ft								
	NOTE: S	oils visually field class	ified in accordance								
	with the l	Jnified Soil Classificat	ion System								

CHDVC-13-1-1-86

								Rolli	าg บe	signation	1 CHD	/C-1	<u>3- 1- 1</u>
DRILLING	G L	OG   DIVISION   South Atlantic I	Division		STALL			arbor			SHEI	ET 1 SH	1
1. PROJECT		South Atlantic I	DIVISION					YSTEM			: VER1		EEIS
Charleston I	Harl	oor Entrance Channel De	epening		State	Pla	ne -	South	Carolir	na NAD83		MLLW	′
				_	_			OF BIT			·		
2. HOLE NUMBER		LOCATION COORDINATE								N OF DRILL			
CHDVC-13- 3. DRILLING AGE		86 N 367912.4471 E	: 2328787.485				MPLE	500 Vib		DISTURBED	UNDIS	TURRE	$\dashv$
Ocean Surv		, Inc.		12.	101	AL 3/	3	.5		3	UNDIS	0	´
4. NAME OF DRIL		,		13.	TOT	AL NU	JMBEI	R CORE I	BOXES	0			
DMB 5. DIRECTION OF	. DOL	ING DEG FROM	BEARING	14.	ELE	/ATIC	N GR	OUND W	ATER	NA			
S. DIRECTION OF  VERTICAL  INCLINED	БОГ	VERTICAL	- BEARING	15.	DAT	E BOI	RING		STARTE	ED 8/2/86	COMPLET 8/	ED 2/86	
6. THICKNESS OF	= OVI	ERBURDEN 12.7'	•	16.	ELE	/ATIC	OT NC	P OF BO		-39.2' M			
7. DEPTH DRILLE										ORING 1009	%		
8. TOTAL DEPTH	OF E			18.		IATUI <b>\/A</b>	RE AN	ID TITLE	OF INSP	ECTOR			
ELEV DEPTH	LEGEND	FIELD CLASSIFICATIO			% REC	<u>o</u>	RQD %			REMARKS		Blows/ 0.5 ft	N-Value
-39.2	<u>-</u>	0': SILTY SAND (SM), fine; of	dark gray, with shell			S	_						
l	<b>!</b>   <b>!</b>	fragments.											
								Start Ti	ime: 11:	10			
<u> </u>						1		Stop Ti	me: 11:	21			
l <del>I</del>													
	<u> </u>												
<del> </del>								Popotr	omotor	0.50 TSF			
	+ [							l elletic	Jilietei -	0.50 151			
<u> </u>													
-44.2 + 5.0	<b>†</b>												
	Ш	5': CLAYEY SANDY SILT (M	IH), olive, calcareous										
#	Ш	(Cooper Marl).											
Ŧ	Ш							Penetro	ometer -	2.30 TSF			
#	Ш					2							
<b>+</b>	Ш												
$\pm$	Ш												
+	Ш												
#	Ш												
-48.4 9.2													
1		9.2': CLAYEY SANDY SILT	(ML), olive, calcareous	6									
	Ш	(Cooper Marl0.											
‡	Ш												
I I	Ш												
#	Ш							Penetro	ometer -	2.0 TSF			
+	Ш												
Ŧ	Ш					3							
-51.9 12.7		BOTTOM OF BOREHOLE A	T -51 Q ft										
		NOTE: Soils visually field cla with the Unified Soil Classific	ssified in accordance ation System										
		and chillion con chaconic											

CHDVC-13-A-1-2-86 **Boring Designation** 

					_				Dorning De	signation			-		
DE	RILLIN	GI	OG	DIVISIO			1	STALL					SHEE		1
		<u> </u>	.00	Sou	uth Atlantic D	ivision					arbor			1 sh	EETS
1. PROJ											/STEM		VERT		.
Cha	rleston	Harl	oor Entra	ance (	Channel Dee	pening	-				South Carolin	na NAD83		ИLLW	
							10.	SIZE	AND	TYPE	OF BIT				
	NUMBER				N COORDINATES						R'S DESIGNATIO	N OF DRILL			
			-2-8 <u>6</u> N	1 3679	<u>312.4471 E</u>	2328787.485					500 Vibracore				
	ING AGE		_				12.	TOTA	L SA	MPLE	S E	ISTURBED	UNDIS		) <b> </b>
	an Surv		., Inc.							2		2		0	
	OF DRIL	LER					13.	TOTA	L NU	MBEF	R CORE BOXES	0			
DME							14.	ELE\	'ATIO	N GR	OUND WATER	NA			
	CTION OF ERTICAL	- BOF	RING		DEG FROM VERTICAL	BEARING					STARTE		COMPLET	ED	
	ICLINED					:	15.	DATE	BOF	RING		8/2/86	•	2/86	
e TUICI	/NESS O	- OV		· NI	12.4'	•	16.	ELE\	'ATIO	N TO	P OF BORING	-50.2' M			
6. I IIICI	CKNESS OF OVERBURDEN 12.4'														
7. DEPT	EPTH DRILLED INTO ROCK 0'										ECOVERY FOR E		<b>'</b> 0		
8 TOTA	L DEPTH	OF F	RORING	62.6'		10.		ATUR I/A	KE AIN	ID TITLE OF INSP	ECTOR				
					02.0										Φ
ELEV	DEPTH	GEND	F	FIELD C	CLASSIFICATION	OF MATERIALS		%	p No.			REMARKS		Blows/ 0.5 ft	N-Value
	J	E E			(Description	on)		REC	Samp	RQD %				<u>ജ</u> o	> <u></u>
-50.2	=					.), olive, calcareous									
Ξ	_	Ш	(Cooper	Marl).											
=	_	Ш									Start Time: 11:				
Ξ	Ξ	Ш									Stop Time: 12:				
=	=	Ш									Penetrometer -	1.35 TSF			
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-62.6	- 12.4		DOTTO:		000511015 :=										

BOTTOM OF BOREHOLE AT -62.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-2-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-2-1-1-86 N 391429.4408 E 2321832.907 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 DMB 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 7/31/86 7/31/86 16. ELEVATION TOP OF BORING -23.8' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 43.8 N/A N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -23.8-0': CLAYEY SILT (MH), gray, with sand, and shale USCS 1 fragments, and organics. Start Time: 10:11 Stop Time: 10:12 -26.7 2.9 2.9': SILTY SAND (SM), fine; gray, with clay, and 2 organics. -33.8 \(\pm\) 10.0 10': SILTY SAND (SP-SM), fine; gray. 3 -37<u>.0 + 13.2</u> 13.2': SILTY CLAYEY SAND (SM), fine; gray, lenses of clay. 4  $-40.6 \pm 16.8$ 16.8': CLAYEY SILT (MH), gray. Penetrometer - 1.0 TSF 5  $-43.8 \pm 20.0$ BOTTOM OF BOREHOLE AT -43.8 ft Charleston Harbor & Entrance Channel

Boring Designation CHDVC-3-1-1-86

DDILLING I		INSTALI	_ATIC	N		SHEE	т -	1		
DRILLING L	South Atlantic Di	vision	Cha	rlest	on H	larbor	OF	<b>1</b> sн	EETS	
1. PROJECT				9. COOF				VERTI		
Charleston Har	bor Entran	ice Channel Deep	pening	State	e Pla	ine -	South Carolina NAD83	N	/ILLW	<b>'</b>
				10. SIZE	AND	TYPE	E OF BIT			
2. HOLE NUMBER		TION COORDINATES			-	-	ER'S DESIGNATION OF DRILL			
CHDVC-3-1-1-8		91830.3102 E 2	2321179.872				500 Vibracore			
3. DRILLING AGENCY				12. TOT	AL SA		•	UNDIST		)
Ocean Surveys						4	4		0	
4. NAME OF DRILLER DMB				13. TOT	AL NU	JMBE	R CORE BOXES 0			
5. DIRECTION OF BOR	PING	DEG FROM	BEARING	14. ELE	VATIC	N GF	ROUND WATER NA			
	W. C.	VERTICAL	ELTRAING	15. DAT	E DOI	DINIC		MPLETE		
☐ INCLINED				15. DA1	Е ВОІ	KING	7/31/86	7/3	1/86	
6. THICKNESS OF OV	ERBURDEN	20'		16. ELE	VATIC	N TO	P OF BORING -43.1' MLLW			
7. DEPTH DRILLED IN	TO BOCK	0'		17. TOT	AL CO	ORE F	RECOVERY FOR BORING 100%			
7. DEPTH DRILLED IN	TO ROCK			18. SIGN	UTA	RE AN	ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF E	BORING	63.1'			N/A					
9	FIE	ELD CLASSIFICATION	OF MATERIALS	0/	Š.				/s/ #	lne
ELEV DEPTH	'"-	Description)		% REC	Samp No.	RgB %	REMARKS		Blows/ 0.5 ft	N-Value
-43.1-	OL OLAYE	, ,	*		ဟိ	<u> </u>			ш	Z
1-45.1	strata or le	Y SANDY SILT (MH nses, fine sand strat	), gray, with sand a 1/8" to 2" thick				USCSStart Time: 11:31 Stop Time: 11:32			
🛨 🚺		d with silt every 1" to								
1 ‡		·								
士				400		1				
				100	1					
-46.7 <sup>±</sup> 3.6						1	Penetrometer = 0.65 TSF			
±	3.6': SILTY	CLAYEY FINE SAN	ND (SM), gray.	100	2	1				
-47.7 <del>    4</del> .6				100						
1 +	4.6': CLAY	EY SANDY SILT (M	H), gray, with sand							
l ‡ <b>       </b>		nses, fine sand strat d with silt every 1" to								
+	increduct	a with one overy 1 to	, T							
1 ‡										
‡										
1 =										
Ī										
<u> </u>										
-52.7 <sup>±</sup> 9.6										
<u> </u>		CLAYEY FINE SAN	ND (SM), gray, with			-				
<b>I</b>	shell fragm	ents.		100	3					
-54.2 11.1	44 41 01 41	(E) ( O A N E) ( O II E (I	141.15	_		-				
<u> </u>	11.1': CLA	YEY SANDY SILT (I nses, fine sand strat	MH), gray, with sand							
‡	interbedde	d with silt every 1" to	4"							
1 =		,					Penetrometer = 0.85 TSF			
Ī										
<u> </u>										
‡				100	4					
1 = 11					<u> </u>					
1 ‡										
1 +										
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1 =										
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l ± 🚺										
<b>1</b>										
-63.1 <del>+</del> 20.0	DOTTON	OF DODELLOLE AT	CO 4 #							
	ROLLOW (	OF BOREHOLE AT	-03.1 T							
	NOTE: Soil	ls visually field class	sified in accordance							
	with the Un	nified Soil Classificat	ion System							

**Boring Designation** CHDVC-4-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT : LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-4-1-1-86 N 390371.1256 E 2319802.163 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 7/31/86 7/31/86 16. ELEVATION TOP OF BORING -41.7' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 61.7' N/A N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.7 0': CLAYEY SANDY SILT (ML), olive, calcareous (Cooper Marl). Start Time: 13:45 Stop Time: 12:41 Penetrometer - 1.75 TSF

BOTTOM OF BOREHOLE AT -61.7 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

 $-61.7 \pm 20.0$ 

Boring Designation CHDVC-4A-1-2-86

		DIVISION		INIC	STALL	٨ΤΙΟ	N.I	DOIL	ig Dc	Signation		V U-4/	$\overline{}$
DRILLING L	DRILLING LOG South Atlantic Division							arbor			SHEI	≣Т 1 1 sн	
1. PROJECT	_	I .		9. (	COOR	DINA	TE S	YSTEM	01	- NA DOO	: VER1	ICAL	
Charleston Harb	or Entr	ance Channel Deep	ening					South OF BIT	Carolir	na NAD83	: '	MLLW	
2. HOLE NUMBER	LO	CATION COORDINATES							SIGNATIO	N OF DRILL			
CHDVC-4A-1-2-	·86 N	N 390371.1256 E 2	319802.163					500 Vib					
<ol> <li>DRILLING AGENCY Ocean Surveys.</li> </ol>	. Inc.			12.	TOTA	AL SA	MPLE 2	S		DISTURBED 2	UNDIS	ORBEL	'
4. NAME OF DRILLER	,			13.	TOT	AL NU		R CORE	BOXES	0	•		
DMB 5. DIRECTION OF BOR	ING	: DEG FROM	BEARING	14.	ELE\	/ATIC	N GR	OUND W		NA			
		VERTICAL		15.	DATE	BO	RING		START	ED 8/5/86	COMPLET 8/	ED 5/86	
6. THICKNESS OF OVE	RBURDE	EN 10.8'	•	16.	ELE\	/ATIC	N TO	P OF BO		-53.7' ML			
7. DEPTH DRILLED INT	O ROCK	0'								SORING 100%	ó		
8. TOTAL DEPTH OF B	ORING	64.5'		18.		1/A	RE AN	ID TITLE	OF INSP	ECTOR			
ELEV DEPTH E		FIELD CLASSIFICATION (Description	-		% REC	Samp No.	RQD %			REMARKS		Blows/ 0.5 ft	N-Value
-53.7	0': CLA' Marl).	YEY SILT (ML), olive, ca				Ö	<u> </u>						z
+	,						-	Start T	ime: 8:5	5			
<b>=        </b>						1			ime: 9:2				
+													
<b>±</b>													
<u> </u>													
<u>±</u>													
<b>+</b>													
<u> </u>								D		4.5.705			
‡								Penetr	ometer -	1.5 TSF			
+												-	
<b>=        </b>						2							
+													
<u> </u>													
$\pm$													
<b>±</b>													
<b>+</b>													
<b>#</b>													
<u> </u>													
+													
-66.5 12.8					_								
	BOTTO	M OF BOREHOLE AT -	64.5 ft										
		Soils visually field classi Unified Soil Classificati											
	with the	Office Our Classificati	on Oysteill										
													1

**Boring Designation** CHDVC-5-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 389375.0795 E 2318320.34 CHDVC-5-1-1-86 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 7/31/86 7/31/86 16. ELEVATION TOP OF BORING -34.4' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.4' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.4 0': CLAYEY ORGANIC SILT (MH), black. Start Time: 15:04 Stop Time: 15:53 1 -40.6 + 6.2 6.2': CLAYEY SANDY SILT (MH), olive, calcareous 2 (Cooper Marl). 3 Penetrometer - 1.5 TSF to 2.75 TSF 4  $-54.4 \pm 20.0$ BOTTOM OF BOREHOLE AT -54.4 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

CHDVC-5A-1-2-86 **Boring Designation** 

												Doning Designation	<u> </u>		<u> </u>
DR	RILLIN	G L	_0	G	DIVISION South Atla	antic Division			TALL			arbor	SHEET OF 1		1 =====
1. PROJ	IECT				South Atte	artic Division						YSTEM	: VERTI		EEIS
		Harl	bor	· Entra	ance Chann	el Deepening		5	State	Pla	ne -	South Carolina NAD83		ILLW	
								10.	SIZE	AND	TYPE	OF BIT	•		
	NUMBE				ATION COORE			1				ER'S DESIGNATION OF DRILL			
	VC-5A LING AGE			5 : N	389378.07	84 E 231931	4.34					500 Vibracore	LINDICT		$\longrightarrow$
	an Surv			nc.				12.	1017	AL SA	MPLE 2	S DISTURBED 2	UNDIST	0 0	'l
4. NAME	OF DRII							13.	TOT	AL NU		R CORE BOXES 0			
DME												OUND WATER NA			
5. DIRE	CTION OF	F BOF	RINC	G	DEG FR		NG						MPLETE	D	
	CLINED							15.	DATE	BOF	RING	8/5/86		/86	
6. THICH	KNESS O	FOV	'ERE	BURDE	N	12.8'		16.	ELE\	/ATIO	N TO	P OF BORING -46.7' MLLW			
7. DEPT	H DRILLE	ED IN	ITO	ROCK		0'						ECOVERY FOR BORING 100%			
8 TOTA	I DEDTH		ROP.	ING		59.5'		18.		iatuf <b>i/A</b>	RE AN	ID TITLE OF INSPECTOR			
0. 1017	Z FIELD CLASSIFICATION OF MATERIALS													_	Φ
ELEV	DEPTH	EGEN		F		ICATION OF MATE Description)	ERIALS		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-46.7_	_		0':	CLAY	EY SANDY S	ILT (MH), olive, o	calcareous			0)					
_	-		(C	ooper	Marl).	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
												Start Time: 10:01			
_												Stop Time: 10:29			
_	_														
_	-														
=												Penetrometer - 1.5 TSF to 2.75 T	SF		
=															
_	_														
_	=														
_	_														
_															
_	_														
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	-														
_	_														
_	_														
_	-														
=															-
=										2					
-59.5	12.8		D/	)TTO	A OE BODELL	OLE AT -59.5 ft									
			D(	J1101V	OF BUKER	OLL AT -09.5 IT									

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-6-1-1-86 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83  $\mathsf{MLLW}$ Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES CHDVC-6-1-1-86 N 383431.995 E 2317595.34 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED

0

13. TOTAL NUMBER CORE BOXES

0

DIME			DINO : DEC EDOM	: DEADING	14. ELE	/ATIC	N GR	OUND WATER NA		
I ⊠ VI	CTION OF ERTICAL ICLINED	- BOF	RING DEG FROM VERTICAL	BEARING 	15. DAT	E BOI	RING	STARTED COMPLET 8/1/86 8/	ED 1/86	
6. THICK	KNESS OI	F OV	ERBURDEN 15	.8'				P OF BORING -24.2' MLLW		
7. DEPT	H DRILLE	D IN	TO ROCK	0'				ECOVERY FOR BORING 100%		
8. TOTA	L DEPTH	OF E		10'		1ATUI <b>1/A</b>	RE AN	ID TITLE OF INSPECTOR		
ELEV	DEPTH	LEGEND		TION OF MATERIALS cription)	% REC	o.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-24.2	- 0.4		0': SILTY SAND (SP-SM)	, fine; black, with gravel.		0)				
-24.6			0': SILTY SAND (SP-SM)  0.4': CLAYEY SANDY SIL (Cooper Marl).		s			Start Time: 11:29 Stop Time: 11:52  Penetrometer - 1.75 TSF to 2.75 TSF		
-40.0	- - - - - - - 15.8									
			BOTTOM OF BOREHOLE	E AT -40.0 ft						

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Ocean Surveys., Inc.

4. NAME OF DRILLER

**DMB** 

0

Boring Designation CHDVC-6A-1-1-86

					70-01	<del>4-   -  </del>
DRILLING LOG	South Atlantic Division	INSTALLATIO			IEET 1 SH	1
1. PROJECT	South Atlantic Division	9. COORDINA	TE S	/STEM VE	RTICAL	
Charleston Harbor	Entrance Channel Deepening			South Carolina NAD83	MLLW	
2. HOLE NUMBER	: LOCATION COORDINATES	10. SIZE AND		OF BIT ER'S DESIGNATION OF DRILL		
CHDVC-6A-1-1-86				500 Vibracore		
3. DRILLING AGENCY Ocean Surveys., In		12. TOTAL SA	MPLE 2	S DISTURBED UND 2	ISTURBEI 0	D
4. NAME OF DRILLER	ic.	13. TOTAL NU		R CORE BOXES 0	- 0	
DMB	DEC FROM DEADING			OUND WATER NA		
5. DIRECTION OF BORING VERTICAL INCLINED	DEG FROM BEARING VERTICAL	15. DATE BOF	RING	STARTED COMPL	ETED 8/1/86	
6. THICKNESS OF OVERBL	URDEN 13.3'	16. ELEVATIO				
7. DEPTH DRILLED INTO R	ROCK 0'			ECOVERY FOR BORING N/A  D TITLE OF INSPECTOR		
8. TOTAL DEPTH OF BORIN	NG 37.3'	N/A	VE AIN	D TITLE OF INSPECTOR		
ELEV DEPTH GENERAL STREET	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-24 <b>0'</b> : 0	CLAYEY SANDY SILT (MH), olive, calcareous coper Marl).					
<b>‡</b>				Start Time: 12:34		
<b>±</b>				Stop Time:		
<b>+</b>				Penetrometer - 2.75 TSF		
主						
<b> </b>						
Ī						
<b>+ 11</b>						
<b>= 1</b>						
<b>主</b>						
<b>+ 111</b>						
<b>基</b>						
<b>‡</b>						
<b>= 11</b>						
± <b>11</b>						
<b>—</b>				Penetrometer - +4.5 TSF		
± <b>11</b>		2				
+						
+ + + + + + + + + + + + + + + + + + +						
± <b>III</b>						
<b>= 11</b>						
+						
<b>+      </b>						
-37.3 <del>+</del> 13.3						
	TTOM OF BOREHOLE AT -37.3 ft					·
NO with	TE: Soils visually field classified in accordance h the Unified Soil Classification System					

CHDVC-6B-1-2-86 **Boring Designation** 

								Doning Designation	CITION		<u> </u>
DRILLING LO	DRILLING LOG South Atlantic Division					ATIO		arbor	SHEE	Т ́1	
1. PROJECT		South Atlantic Di	VISIOIT					YSTEM	: VERTI		EEIS
	r Entr	ance Channel Dee	pening					South Carolina NAD83		/ILLW	
• · · · · · · · · · · · · · · · · · · ·		a	· · · · · · · · · · · · · · · · · ·	_				OF BIT	-		
2. HOLE NUMBER		CATION COORDINATES		1				ER'S DESIGNATION OF DRILL			
CHDVC-6B-1-2-8	6 : N	I 383475.9999 E 2	2317632.331					500 Vibracore	·		
<ol> <li>DRILLING AGENCY         Ocean Surveys., I</li> </ol>	Inc			12.	1017	IL SA	MPLE 3	DISTURBED 3	UNDIST	URBEL	)
4. NAME OF DRILLER				13.	TOTA	L NU		R CORE BOXES 0	:		
DMB				_				OUND WATER NA			
5. DIRECTION OF BORIN  VERTICAL	IG	DEG FROM VERTICAL	BEARING						OMPLETE	-D	
INCLINED				15.	DATE	BOF	RING	8/1/86		/86	
6. THICKNESS OF OVER	BURDE	N 13.5'	•	16.	ELEV	'ATIO	N TO	P OF BORING -34' MLLW			
7. DEPTH DRILLED INTO	ROCK	0'						ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF BOR	RING	47.5'		18.		атин <b>I</b> /A	KE AN	ND TITLE OF INSPECTOR			
ELEV DEPTH GEND		FIELD CLASSIFICATION	OE MATERIAL S							t, s/	en
ELEV DEPTH		PIELD CLASSIFICATION (Descriptio			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-34 + 0'	: CLA	YEY SANDY SILT (ML)	, olive, calcareous			o					
‡ (C	Cooper	Marl).									
+								Start Time: 15:41			
<b>+</b>								Stop Time: 16:30			
‡								Penetrometer - +4.5 TSF			
								Felletionietei - +4.5 13i			
± <b>         </b>											
<b>+</b>											
‡											
Ŧ											
± <b>           </b>						1					
<b>†</b>								Penetrometer - 1.5 TSF			
‡											
+											
<b>+</b>											
+											
<b>±</b>											
± <b>         </b>						2					
<b>‡</b>											
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<b>+        </b>											
<b>+</b>											
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± <b>       </b>											
<b>‡</b>											
+											
<b> </b>											
± <b>1</b>						3					
-47.5											
В	OTTO	M OF BOREHOLE AT	-47.5 ft								
N	OTF 9	Soils visually field class	ified in accordance								l

Boring Designation CHDVC-7-1-1-86

											1V U-7-	<u>- 1 - 1 - 0</u>					
DRILLI	NG	LC	OG DIVISIO	N th Atlantic Division	11		TALL Char					1 IEETS					
1. PROJECT						Charleston Harbor OF 1 SHEE 9. COORDINATE SYSTEM : VERTICAL											
Charleston Harbor Entrance Channel Deepening						State Plane - South Carolina NAD83 MLLW											
2 HOLE NUMBER 1 COATION COORDINATES						10. SIZE AND TYPE OF BIT  11. MANUFACTURER'S DESIGNATION OF DRILL											
2. HOLE NUMBER LOCATION COORDINATES CHDVC-7-1-1-86 N 382458.0233 E 2317565.493						OSI Model 1500 Vibracore											
3. DRILLING AC			Ina		1.	12. TOTAL SAMPLES DISTURBED UNDISTURBED 4 0											
Ocean Su 4. NAME OF DE			1110.		1	2	TOT	AL NII	•	R CORE BOXES 0							
DMB		•			_												
5. DIRECTION OF BORING DEG FROM BEARING  VERTICAL VERTICAL  INCLINED							14. ELEVATION GROUND WATER NA  15. DATE BORING STARTED COMPLETED  8/4/86 8/4/86										
6. THICKNESS		VEF		13.3'	1	16. ELEVATION TOP OF BORING -24' MLLW											
7. DEPTH DRIL	LED II	NTC	ROCK	0'		17. TOTAL CORE RECOVERY FOR BORING 100%  18. SIGNATURE AND TITLE OF INSPECTOR											
8. TOTAL DEPT	H OF	во	RING	37.3'	1	- 18. SIGNATURE AND TITLE OF INSPECTOR N/A											
ELEV DEPTH	LEGEND		FIELD CI	LASSIFICATION OF MATI	ERIALS		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value					
-24 <u> </u>			': SILTY SAND and shells.	(SM), fine; black, with	organics,			1		USCS							
-25.1 1.1	• •		.7': SAND (SP)					2									
+			1.1': CLAYEY SANDY SILT (ML), olive, calcareou							Start Time: 14:19 Stop Time: 14:39							
王		(	Cooper Marl).							Ctop Times Times							
#																	
#																	
+										Penetrometer - 1.5 TSF to 2.5 TSF							
i ‡								2									
+ + + + + + + + + + + + + + + + + + + +								3									
+																	
+																	
王																	
±																	
#		6	<b>.5':</b> Higher clay	content.													
+																	
<b>+</b>																	
$\pm$																	
#																	
+								4									
+ + + + + +																	
$\pm$																	
‡																	
#																	
王										Penetrometer - 2.8 TSF							
$\pm$																	
+																	
<b>+</b>																	
<u>+</u> -37.3 <u>+</u> 13.3																	
30   10.0		Е	BOTTOM OF BO	OREHOLE AT -37.3 ft		_				1		'					
				ually field classified in a Soil Classification Syst													
		•															

**Boring Designation** CHDVC-7A-1-2-86

DRILLING L	OG	DIVISION			STALL				SHEE	Τ 1				
1. PROJECT	South Atlantic Div	Charleston Harbor OF 1 SHEETS 9. COORDINATE SYSTEM : VERTICAL												
	rance Channel Deep	State Plane - South Carolina NAD83  VERTICAL  VERTICAL  VERTICAL												
		10. SIZE AND TYPE OF BIT												
2. HOLE NUMBER CHDVC-7A-1-2-	OCATION COORDINATES N 382458.0233 E 2	11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore												
<ol> <li>DRILLING AGENCY Ocean Surveys.</li> </ol>		12. TOTAL SAMPLES DISTURBED UNDISTURBED 5 0												
4. NAME OF DRILLER DMB				13. TOTAL NUMBER CORE BOXES 0										
5. DIRECTION OF BOR	ING	DEG FROM	BEARING	14. ELEVATION GROUND WATER NA COMPLETED										
		VERTICAL		15. DATE BURING 8/4/86 8/4/86										
6. THICKNESS OF OVE	RBURD			16. ELEVATION TOP OF BORING -33' MLLW  17. TOTAL CORE RECOVERY FOR BORING 100%										
7. DEPTH DRILLED INT	O ROC	<del>-</del>		18. SIGNATURE AND TITLE OF INSPECTOR										
8. TOTAL DEPTH OF B	ORING	53'		N/A										
ELEV DEPTH S		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value			
-33 ±		YEY SANDY SILT (ML). er Marl).	olive, calcareous			1		USCS						
<u> </u>	Сооре	i iviaii).						Start Time: 15:09						
<b>=        </b>								Stop Time: 15:41 Penetrometer - 1.75 TSF						
<u> </u>														
<b>基</b>														
						2								
<u> </u>						3								
<b>#</b>														
<u> </u>														
<u> </u>														
#														
<b>=                    </b>														
<del></del>						4								
<b>=        </b>														
<b>I</b>														
<u> </u>														
<b>+        </b>														
<b>± 11</b>						5								
<u> </u>														
#														
<b>=        </b>														
#														
-53.0 ‡ 20.0	BOTTO	OM OF BOREHOLE AT -	53.0 ft											
		Soils visually field classi												
	with the	e Unified Soil Classificati	on System											
											- 1			

**Boring Designation** CHDVC-8-1-1-86 INSTALLATION SHEET Charleston Harbor OF 1 SHEETS

DRILLING LOG	South Atlantic Division			Charleston Harbor OF 1 s								
1. PROJECT Charleston Harbor Er	ntrance Channel Deepening	9. COORDINATE SYSTEM State Plane - South Carolina NAD83  VERTICAL MLLW										
		10. SIZE AND TYPE OF BIT										
CHDVC-8-1-1-86	LOCATION COORDINATES N 381261.0991 E 2317768.672	11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore										
3. DRILLING AGENCY Ocean Surveys., Inc.		12. TOTAL SAMPLES DISTURBED UNDISTURBED 6 0										
4. NAME OF DRILLER DMB		13. TOTAL NUMBER CORE BOXES 0										
5. DIRECTION OF BORING	DEG FROM BEARING	14. ELEVATION GROUND WATER NA : COMPLETED : COMPLETED										
✓ VERTICAL     ☐ INCLINED	VERTICAL	15. DATE BORING STARTED COMPLETED 8/4/86 8/4/86  16. ELEVATION TOP OF BORING -26.3' MLLW										
6. THICKNESS OF OVERBUR	-	17. TOTAL CORE RECOVERY FOR BORING 100%										
7. DEPTH DRILLED INTO ROO	<u> </u>	18. SIGNATURE AND TITLE OF INSPECTOR										
8. TOTAL DEPTH OF BORING	G 43.9'	N/A										
ELEV DEPTH Q	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value				
-26.3 <b>0'</b> : SII	LTY SAND (SP-SM), fine; gray, with organics.			1		USCS						
±					-	Start Time: 11:19						
-28.1 - 1.8	SILTY SAND (SM), fine; dark brown, with				-	Stop Time: 11:38						
organ				2								
-29.5 3.2 3 21· 6	SILTY CLAYEY SAND (SC-SM), fine; light											
browr	n, with organics, calcareous (Cooper Marl).			3								
-31.3 + 5.0					1							
	LTY SANDY CLAY (CL), tan, calacareous.											
± ///												
						Penetrometer - 2.0 TSF to 3.75 TSF						
+ //				4	1							
<b></b>				_								
-35.1 + 8.8												
8.8': (	CLAYEY SANDY SILT (ML), olive, calcareous per Marl).											
± (Cook	per Man).											
Ī												
<u> </u>						Penetrometer - 2.0 TSF						
<b>±</b>						T CHEROMETER 2.0 TO						
<b>‡</b>				5								
+												
‡												
<b>T</b>												
<u> </u>												
<b>±</b>												
±												
<u> </u>					1							
-43.9 + 17.6				6								
BOTT	FOM OF BOREHOLE AT -43.9 ft											
	E: Soils visually field classified in accordance he Unified Soil Classification System											

DIVISION

DRILLING LOG

CHDVC-8A-1-<u>2</u>-86

								Boring Designation	CHUV	<u>U-8/</u>	<del>1-1-2</del>		
DRILLING L	06	DIVISION			STALL				SHEE	T ′	1		
DRILLING L	.00	South Atlantic Div	vision	(	Char	lesto	OF '	<b>1</b> sн	EETS				
1. PROJECT	har Fn4	transa Channal Daar	aning.	9. COORDINATE SYSTEM : VERTICAL State Plane - South Carolina NAD83 : MLLW									
Chanesion han	וום וטט	trance Channel Deep	bening				÷ 1V						
					10. SIZE AND TYPE OF BIT  11. MANUFACTURER'S DESIGNATION OF DRILL  OSI Model 1500 Vibracore								
						12. TOTAL SAMPLES : DISTURBED : UNDISTURBED							
Ocean Surveys	., Inc.						2	2	:	0			
4. NAME OF DRILLER DMB				13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA									
5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL INCLINED						BOF			OMPLETE 8/4	D 1/86			
6. THICKNESS OF OV	ERBURD	DEN 10'	•	16.	ELEV	'ATIO	N TO	P OF BORING -41.3' MLLW					
7. DEPTH DRILLED IN	TO ROCI	K 0'						ECOVERY FOR BORING 100%					
8. TOTAL DEPTH OF E		51.3'		18.		ATUF <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR					
ELEV DEPTH	JOKING	FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-41.3	<b>0'</b> - CL A	AYEY SANDY SILT (ML)	•			Š	<u>«</u>	USCS		ш	Ž		
±	Coope		, olive, calcaleous,			1		0000					
± ± ±					•			Start Time: 13:34 Stop Time: 13:51					
-43.8 2.5		LAYEY SILTY SAND (So eous (Cooper Marl).	C), fine; olive,					Penetrometer - +4.5 TSF					
								Penetrometer - 1.25 TSF to 2.25	TSF				
						2							
-51.3 10.0		DM OF BOREHOLF AT :											

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-9-1-1-86 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS OF 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-9-1-1-86 N 378911.176 E 2317768.039 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/4/86 8/4/86 16. ELEVATION TOP OF BORING -25.6' MLLW 6. THICKNESS OF OVERBURDEN 16.4 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 42' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) 0': CLAYEY SAND, fine; gray, with shell fragments, -<del>26</del>.6± 0.5 1 USCS \and rock fragments. 0.5': CLAYEY SANDY SILT (ML), brown and olive, Start Time: 9:09 calcareous (Cooper Marl). Stop Time: 9:26 2 Penetrometer - 2.5 TSF 3 11.4': Last 5' has much lower silt content. 4 -42.0<del> = </del>16.4 BOTTOM OF BOREHOLE AT -42.0 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CR-MS-1-00 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL MLLW Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 10. SIZE AND TYPE OF BIT N/A 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-MS-1-00 N 392908.004 E 2323143.256 Vibracore Generic 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Y. Me 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/25/00 10/25/00 16. ELEVATION TOP OF BORING -21.81' MLLW 6. THICKNESS OF OVERBURDEN 6' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 27.81' N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -21.81 0': SILTY SANDY CLAY (CL-ML), with gravel, and shell fragments.

BOTTOM OF BOREHOLE AT -27.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

-27.8 + 6.0

**Boring Designation** CR-MS-2-00 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL MLLW Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 10. SIZE AND TYPE OF BIT N/A 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-MS-2-00 N 393141.737 E 2324061.568 Vibracore Generic 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED General Engineering 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Y. Me 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/26/00 10/26/00 16. ELEVATION TOP OF BORING -21.31' MLLW 6. THICKNESS OF OVERBURDEN 0.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 21.81' N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -21.31 -21.8 0': SILTY SANDY CLAY (CL-ML), with gravel, and 0.5 shell fragments. BOTTOM OF BOREHOLE AT -21.8 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CR-MS-3-00 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL MLLW Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 10. SIZE AND TYPE OF BIT N/A 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-MS-3-00 N 393155.037 E 2325360.633 Vibracore Generic 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED General Engineering 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Y. Me 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/26/00 10/26/00 16. ELEVATION TOP OF BORING -22.81' MLLW 6. THICKNESS OF OVERBURDEN 0.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 23.31' N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) 0': SILTY SANDY CLAY (CL-ML), with gravel, and 0.5 shell fragments. BOTTOM OF BOREHOLE AT -23.3 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DI-38-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES DI-38-88 N 360342.8943 E 2330257.705 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/29/88 2/29/88 INCLINED 16. ELEVATION TOP OF BORING -39' MLLW 6. THICKNESS OF OVERBURDEN 11.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -39 0': SILT (MH), black. USCS 0 1 5.2 -44.2-5.2': SAND (SP), fine; gray, Poorly Graded, with silt, calcareous. 2 10 -45.7 6.7 6.7': SILT (MH), black. 3 1 -47.2 8.2 8.2': CLAYEY SAND (SC), fine; gray, with shell fragments. 4 4 -48.7 9.7 9.7': CLAY (CH), high plasticity; green, high plasticity, with sand, calcareous. 5 12 -50.2 BOTTOM OF BOREHOLE AT -50.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DI-39-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 359128.0124 E 2331225.033 DI-39-94 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/22/94 8/22/94 -22.2' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 34.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -22.2= 0': CLAY (CH), high plasticity; gray, high plasticity, USCS trace quartz, and shell fragments. 1 0 2 0 3 0  $-45.9 \pm 23.7$ 23.7': CLAYEY SAND (SC), fine to medium; gray, some silt, trace shell fragments. 3 4 Began using saltwater drilling mud **-50.4**<sup>∓</sup>28.2 28.2': SAND (SP), fine to medium; gray, Poorly Graded, trace shell fragments. 5 20 30.8': No shells. 23 6 <u>-56.4</u> <u>34.2</u> BOTTOM OF BOREHOLE AT -56.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DI-40-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 359942.2548 E 2330417.75 DI-40-94 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/20/94 8/20/94 16. ELEVATION TOP OF BORING -45.9' MLLW 6. THICKNESS OF OVERBURDEN 12.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.9\_ 0': CLAY (CH), high plasticity; dark gray to black, USCS high plasticity, trace sand. 0 -50.4 4.5 4.5': SANDY CLAY (CL), low plasticity; fine; olive gray, low plasticity, calcareous. 2 8 6.5': CLAY, low plasticity; olive gray, low plasticity, trace sand, calcareous. 3 17 -55.4  $\mp$ 9.5 9.5': CLAYEY SAND (SC), fine; olive gray, calcareous. 4 15 5 15 -58.4 12.5 BOTTOM OF BOREHOLE AT -58.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DI-41-95 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES DI-41-95 N 359592.811 E 2330259.929 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/12/95 9/12/95 16. ELEVATION TOP OF BORING -46.4' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.4\_ USCS 0': CLAY (CH), high plasticity; gray, high plasticity, trace shale fragments, and wood. 0 1 3.8': No wood. 2 0 3 0

4

5

BOTTOM OF BOREHOLE AT -55.4 ft

plasticity, trace sand.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

8.2': CLAY (CL), low plasticity; olive gray, low

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-54.6

-55.4

- 8.2

9.0

12

**Boring Designation** DI-42-95 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 360214.8801 E 2331267.108 DI-42-95 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 26 26 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/13/95 9/13/95 16. ELEVATION TOP OF BORING -10.4' MLLW 6. THICKNESS OF OVERBURDEN 45.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -10.4 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, trace shell fragments. 1 0 -13.7<del>++</del> 3.3 3.3': SILTY SAND (SM), fine to medium; dark gray, 2 10 trace shell fragments. 3 9 No sample recovered on first drive from 6.3' to 7.8'. Re-drove to 7.8', then continued drive to 9.3'. 4 15 **-19.7** 9.3 9.3': SAND (SP), fine to medium; gray, Poorly 5 9 Graded, trace silt, and shell fragments. 6 13 7 11 8 17 9 13  $-27.2 \pm 16.8$ 16.8': No recovery <u>-28.7 + 18.3</u> 18.3': SILTY SAND (SM), fine to medium; dark gray, trace shell fragments. 10 18 11 14 12 18 22.8': Trace clay. 13 20 14 22 25.8': No clay. 15 15 27.3 27.3': SAND (SP), fine to medium; gray, Poorly 16 22 Graded, trace silt, and shell fragments. 17 13

**Boring Designation** DI-42-95

DRILLING LOG (Cont Sheet)		INSTALLATION							SHEET 2				
ואטן	LING	LO	G (Cont Sneet)	Charleston Harbor							of 2 SHEETS		
PROJEC	CT			COORDINATE SYSTEM : HORIZONTAL						VERTICAL			
	Charleston Harbor Entrance Channel Deepening			State				NAD83	MLLW		,		
LOCATI	LOCATION COORDINATES			ELE	EVAT	ION T	OP O	F BORING		·			
N 360214.8801 E 2331267.108				-10.4'									
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	F	REMARKS		Blows/ 0.5 ft	N-Value	
<b>∖-40.7</b> - -	₹ <b>30.3</b> _/		<b>30.3':</b> SAND (SM), fine to medium; dark gray, some clay, trace shell fragments.	;		18						14	
-43.7	33.3					19						14	
			<b>33.3':</b> CLAYEY SAND (SC), fine to medium; dark gray, trace shell fragments.			20						26	
			36.3': Dark gray to black.			21						13	
-49.7	39.3					22						6	
-	_		<b>39.3':</b> CLAY (CL), low plasticity; olive gray, low plasticity.			23						15	
						24						19	
=======================================	<u>=</u> = =					25						21	
-55.7	45.3		POTTOM OF PORTUOI F AT 55.7.4			26			OOT: Number rea			19	

BOTTOM OF BOREHOLE AT -55.7 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** DI-43-95 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DI-43-95 N 359422.9761 E 2332799.113 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/14/95 9/14/95 INCLINED 16. ELEVATION TOP OF BORING -26.1' MLLW 6. THICKNESS OF OVERBURDEN 29 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -26.1= 0': CLAYEY SILT (MH), dark gray, trace sand. USCS Used BASCO salt water drilling mud at 0.0'0 1 -35.8 9.7 9.7': CLAY (CH), high plasticity; dark gray, high plasticity, trace sand, and silt. 2 0 -39.7 = 13.6 13.6': CLAYEY SAND (SC), fine; dark gray. 3 0 <u>-42.2</u> 16.1 16.1': CLAY (CH), high plasticity; dark gray, high 4 0 plasticity, some sand. 5 0 <u>-50.6 = 24.5</u> 24.5': CLAYEY SAND (SC), fine; gray, trace shell fragments. 0 6 7 23 -55.1 1 29.0 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation DIB-1-88** INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES DIB-1-88 N 371583.2362 E 2328168.896 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL VERTICAL 15. DATE BORING 9/29/88 9/29/88 16. ELEVATION TOP OF BORING -41.8' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.8 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.8\_ USCS 0': SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, trace sand, and gravel, 1 4 calcareous. 1.5': Some sand. 2 38 4.5': Trace shells, and gravel. 3 33 4 28 -50.8+ 9.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.8 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** DIB-2-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES DIB-2-88 N 370340.4332 E 2329071.077 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/29/88 9/29/88 16. ELEVATION TOP OF BORING -42.5' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-42.5_ - - - - -	- 1		<b>0':</b> SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, some sand, calcareous.		1		USCS		13
-			1.5': Trace sand, and shell fragments.						
					2				17
-	-								
-	-								
-50.0	F I				3				33

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** DIB-3-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 369296.4063 E 2328764.257 DIB-3-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED VERTICAL 15. DATE BORING 9/29/88 9/29/88 16. ELEVATION TOP OF BORING -43.1' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6' James Arthur, P.G. t t 9 ġ

ELEV	DEPTH	LEGEN	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No	RQD %	REMARKS	Blows/ 0.5 ft	N-Valu
-43.5	0.4		<b>0':</b> CLAY (CH), high plasticity; dark gray to black, wet, high plasticity, trace sand.		1		USCS		0
- - -	<u>-</u> -		<b>0.4':</b> SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, trace sand, calcareous.		2				4
									33
- - - - -			3': Trace shell fragments.		3				21
-			4.5': No sand or shells.						31
-50.6	<u> </u>				4				29

BOTTOM OF BOREHOLE AT -50.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** DIB-4-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-4-89 N 371905.1923 E 2327974.849 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/25/89 5/25/89 INCLINED 16. ELEVATION TOP OF BORING -25.8' MLLW 6. THICKNESS OF OVERBURDEN 29.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -25.8 0': CLAY (CH), high plasticity; dark gray, wet, high USCS 0 plasticity, with shell fragments. 1 4 9 4.3': Gray, moist, with gravel, fewer shells. 11 2 7 -33.1 7.3 7.3': SILT (ML), low plasticity; olive green, moist, 3 13 low plasticity, calcareous. 13 19 11.5': With gravel. 4 14 15 29 17 5 22 18.5': CLAYEY. 31 23 6 28 6 28 29 7 22 17 8 21 -55.6 = 29.8 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DIB-5-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-5-89 N 370929.3443 E 2328667.991 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/26/89 5/26/89 16. ELEVATION TOP OF BORING -41.5' MLLW 14' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.5\_ 0': SILT (ML), low plasticity; olive gray, moist, low USCS 0 plasticity, calcareous. 26 19 3.5': With shell fragments. 23 5': CLAYEY, no shell fragments. 2 32 27 18 3 19 22 4 14 -55.5  $\pm$  14.0 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** DIB-6-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-6-89 N 369504.5245 E 2329451.205 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/31/89 5/31/89 16. ELEVATION TOP OF BORING -40.1' MLLW 6. THICKNESS OF OVERBURDEN 14.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.1\_ 0': CLAYEY SILT (ML), low plasticity; olive green, USCS low plasticity, with shell fragments. 0 48 1 12 24 -45.9<sup>+</sup> 5.8 5.8': SILTY CLAY (CL), low plasticity; olive green, low plasticity, with gravel, and shell fragments, 2 18 calcareous. 22 -49.0 8.9 8.9': CLAYEY SILT (ML), olive green, with gravel, and shell fragments, calcareous. 3 16 12 16 4 15 -55.0 ‡ 14.9 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIB-7-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL Failing 314 DIB-7-90 N 371354.1987 E 2327923.941 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 2/10/90 2/10/90 16. ELEVATION TOP OF BORING -40.4' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.4\_ 0': CLAY (CL), low plasticity; olive green, moist, low USCS plasticity, trace sand, calcareous. 1 8 2 20 3': Some sand. 3 18 17 4 6': Trace sand. 5 25 6 28 7 18 8 15 9 16 10 15  $-55.4 \pm 15.0$ BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIB-8-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-8-90 N 370745.2171 E 2327932.041 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/10/90 2/10/90 INCLINED 16. ELEVATION TOP OF BORING -38.8' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.8 0': CLAYEY SILT (MH), dark gray to black, wet, USCS some sand, slightly calcareous. 0 1 4.2 4.2': CLAY (CL), low plasticity; olive green, wet, low 2 3 plasticity, some sand, calcareous. 3 22 4 16 20 5 9.2': Trace sand. 6 19 7 20 8 19 9 13 10 19 -55.3 = 16.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.3 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIB-9-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-9-90 N 371239.143 E 2327595.969 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/8/90 4/8/90 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.9\_ 0': SILT (ML), low plasticity; olive green, moist, low USCS plasticity, calcareous. 1 16 2 18 3 16 4.5': Trace shell fragments. 4 19 5 20 7.5': No shell fragments. 6 20 7 15 10.5': Trace shell fragments. 8 13 12 9 10 12 <u>-55.9</u> + 15.0 BOTTOM OF BOREHOLE AT -55.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES Failing 314 **DIR-1-88** N 367560.5546 E 2329332.529 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Army Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/30/88 9/30/88 16. ELEVATION TOP OF BORING -44.1' MLLW 6' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1' James Arthur, Geologist o

ELEV	DEPTH	LEGEN	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No	RQD %	REMARKS	Blows, 0.5 ft	N-Valu
-44.1 <sub>-</sub> -44.6-	0.5		0': CLAY (CH), dark gray to black, wet.		1		USCS		0
-	<del>-</del>  		<b>0.5':</b> SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, trace sand, calcareous.		2				2
-									26
- - - -	<del>-</del>    								28
-50.1	‡				3				18

BOTTOM OF BOREHOLE AT -50.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** DIR-10-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-10-90 N 364988.5715 E 2329066.96 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/6/90 2/6/90 16. ELEVATION TOP OF BORING -36.8' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.8 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 1 <u>-46.9 = 10.1</u> 2 -47.3 10.5 10.1': SILTY SAND (SM), fine; grayish tan, wet, 3 slightly calcareous. 3 15 10.5': CLAY (CL), low plasticity; olive green, moist, low plasticity, some sand, calcareous. 4 18 5 19 18 6 7 18 -54.8<sup>‡</sup> 18.0 BOTTOM OF BOREHOLE AT -54.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-11-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-11-90 N 364861.4701 E 2328486.994 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/6/90 2/6/90 INCLINED 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace shells, and shell fragments. 0 1 -44.9 3.0 3': CLAY (CH), high plasticity; gray, moist, high plasticity, trace shell fragments. 2 0 3 5 4 0 5 9.7 -51.6 9.7': CLAY (CL), low plasticity; olive gray, moist, low 6 5 plasticity, some sand, calcareous. 7 19 8 14 -55.4 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-12-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-12-90 N 367369.4944 E 2328971.57 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/7/90 4/7/90 INCLINED 16. ELEVATION TOP OF BORING -39.1' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.1-0': CLAY (CH), high plasticity; dark gray, saturated, USCS high plasticity, some shell fragments. 0 1 -43.1 -43.6 4.0 4': CLAYEY SAND (SC), fine to medium; grayish 4.5 2 2 green, some shell fragments. 4.5': ORGANIC SILT (ML), low plasticity; olive 3 13 green, moist, low plasticity, calcareous. 4 16 5 14 6 15 7 12 12': With shell fragments. 8 16 9 15 10 16 -55.6 = 16.5 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-13-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-13-90 N 366576.5147 E 2328971.7 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Army Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/9/90 4/9/90 16. ELEVATION TOP OF BORING -42.6' MLLW 6. THICKNESS OF OVERBURDEN 12.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.6\_ 0': FAT CLAY (CH), dark gray, saturated, "soupy". USCS Weight of rods drove splitspoon from 42.6 to 48.9. Pulled tools and took Sample #1 from rods. 0 1 4.5': Wet. 0 2 -47.9 5.3': SILTY SAND (SM), fine to medium; light gray, 3 0 -48.4 · 5.8 wet, some shell fragments. 4 0 5.8': LEAN SILT (ML), olive green, moist, some shell fragments, calcareous, inorganic silt. 5 16 6 14 7 15 11': No shell fragments. 8 13 -54.9 12.3 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** DIR-14-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 362627.7195 E 2329271.963 DIR-14-97 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 9 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/21/97 6/21/97 INCLINED 16. ELEVATION TOP OF BORING -27.4' MLLW 6. THICKNESS OF OVERBURDEN 25.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.8 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp **REMARKS** RQD % REC (Description) -27.4 0': SAND (SP), fine to medium; dark gray, Poorly USCS Graded, some shell fragments, trace silt. 1 0 2.9 2.9': CLAYEY SAND (SC), fine; olive, trace shell 2 0 fragments, calcareous. -31.8 = 4.4 4.4': CLAY (CL), low plasticity; olive, low plasticity, 0 3 8 trace sand, calcareous. 0 8 4 7 21 9 6 5 6 19 7  $-42.3 \pm 14.9$ 14.9': CLAYEY SAND (SC), fine; olive, calcareous. 17 6 6 7 16 43 -46.8 19.4 15 19.4': CLAY (CL), low plasticity; olive, low plasticity, 10 8 40 trace sand, calcareous. 14 16 22.4': Some sand. 16 9 5 -52.8 = 25.4 BOTTOM OF BOREHOLE AT -52.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation DIR-2-88** INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 366239.4645 E 2328645.764 **DIR-2-88** Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/5/88 10/5/88 16. ELEVATION TOP OF BORING -40.2' MLLW 11' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.2 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.2\_ 0': CLAY (CH), high plasticity; dark gray, wet, high USCS plasticity, with sand. 6 6 -48.2<sup>+</sup> 8.0 8': CLAY (CL), low plasticity; olive green, low

2

3

BOTTOM OF BOREHOLE AT -51.2 ft

plasticity, with shell fragments, calcareous.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-51.2 + 11.0

12

32

**Boring Designation** DIR-3-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL N 368630.5534 E 2329481.349 DIR-3-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/31/89 5/31/89 16. ELEVATION TOP OF BORING -42.5' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.5\_ 0': SILT (ML), low plasticity; olive green, low USCS plasticity, calcareous. 0 31 33 16 2 32 27 26 26 3 17 <u>-55.5  $\pm$  13.</u>0 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-4-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-4-89 N 365763.5642 E 2329132.831 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/89 6/1/89 16. ELEVATION TOP OF BORING -35.4' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.4-0': CLAY (CH), soft; high plasticity; dark gray, wet, USCS 0 high plasticity. NOTE: Material on outside of rod was fat clay (CH), dark grey, soft, wet. 1 16 33 16 2 23 27 26  $-45.9 \pm 10.5$ 10.5': SILT (ML), low plasticity; olive green, moist, 26 low plasticity, calcareous, very uniform. 1 16 3 19 2 23 3 19 <u>-54.9</u> 19.5 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-5-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER DIR-5-89 N 363947.592 E 2329041.133 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/89 6/1/89 -43.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 11.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.3\_ 0': SILT (ML), low plasticity; olive green, moist, low plasticity, with shell fragments, calcareous. 30 1 2 20 8': Some clay. 3 18 -54.5 BOTTOM OF BOREHOLE AT -54.5 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DIR-6-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL **DIR-6-89** N 363078.4834 E 2328324.291 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/1/89 6/1/89 16. ELEVATION TOP OF BORING -41' MLLW 6. THICKNESS OF OVERBURDEN 13.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41 0': SILT (ML), low plasticity; olive green, moist, low plasticity, calcareous. 17 1 2 19 7.6': With shell fragments. 3 21 4 15 -54.8 + 13.8 BOTTOM OF BOREHOLE AT -54.8 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DIR-7-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-7-90 N 367099.4565 E 2328722.62 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/9/90 2/9/90 INCLINED 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp **REMARKS** RQD % REC (Description) -40.9\_ 0': SILTY SAND (SM), fine to medium; dark gray to USCS black, wet, trace clay, and shell fragments, slightly calcareous. 0 1 2 11 4.5': SAND, medium to coarse; some shell fragments. 3 3 6': SAND, fine to medium; trace shell fragments. 4 11 7.5 -48.4 7.5': SAND (SP), dark gray, Poorly Graded, wet, some shell fragments, trace silt, slightly calcareous. 5 5 6 12 -51.4 \(\preceq\) 10.5 10.5': CLAYEY SAND, fine to medium; dark gray. NOTE: Mixed Zeogel mud at 51.4'. 7 13 -55.0 14.1 14.1': CLAY (CL), low plasticity; olive green, moist, 8 9 low plasticity, some sand, calcareous. -55.9<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -55.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-8-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL **DIR-8-90** N 366611.573 E 2329299.687 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/7/90 2/7/90 16. ELEVATION TOP OF BORING -29.5' MLLW 6. THICKNESS OF OVERBURDEN 25.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -29.5 0': CLAY (CH), high plasticity; dark gray to gray, USCS high plasticity, with organics. 1 0 3': Gray. 2 1 4.5': Moist, trace shell fragments, no organics. 3 3 7.5': No shells. 4 1 5 3  $-46.0 \pm 16.5$ 16.5': CLAYEY SAND (SC), fine; tan, dry, trace 6 5 shell fragments, calcareous. -47.5 <del>+</del> 18.0 18': CLAY (CL), low plasticity; tan, low plasticity, 7 trace sand, calcareous. 10 19.5': Tan to light brown, moist, no sand. 8 18 21': CLAY, low plasticity; olive green, moist, low plasticity, trace sand, calcareous. 9 24 10 22 11 14 -55.0±25.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-9-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-9-90 N 364014.5696 E 2328926.124 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/7/90 2/7/90 16. ELEVATION TOP OF BORING -42' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace sand, and shell fragments. 1 0 -46.0 4.0 4': CLAY (CL), low plasticity; olive green, moist, low 2 12 plasticity, trace sand, calcareous. 3 16 21 4 5 24 6 19 7 15 8 14 -55.5 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.5 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-1-88 N 384128.991 E 2317712.226 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/20/88 9/20/88 16. ELEVATION TOP OF BORING -22.7' MLLW 6. THICKNESS OF OVERBURDEN 27' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -22.7-0': CLAYEY SAND (SC), medium; dark gray, wet, USCS 0 1 slightly calcareous. -24.2 1.5 1.5': SILTY CLAY (CL), low plasticity; light greenish 2 brown, moist, low plasticity, some sand, calcareous. 21 3 18 4 27 5 18  $-42.2 \pm 19.5$ 19.5': CLAYEY SAND (SC), fine; light greenish 6 26 brown, moist, calcareous. 7 14 -49.7 = 27.0 BOTTOM OF BOREHOLE AT -49.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-10-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-10-89 N 368598.5211 E 2318016.642 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/15/89 5/15/89 -32.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 23.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.3 0': SILTY CLAY (CL), low plasticity; light greenish USCS brown, low plasticity, some sand, trace silt. 16 1 2 18 3 25 4 18 15.8': Trace sand. 5 11 6 11 -55.6<del>±</del>23.3 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** FCR-11-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-11-90 N 387357.0227 E 2318446.693 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/11/90 1/11/90 16. ELEVATION TOP OF BORING -38.5' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 55' 8. TOTAL DEPTH OF BORING David Belville, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.5 0': SILT (MH), high plasticity; dark gray, high USCS plasticity. 0 1 2 2 7': Olive green. 3 20 4 1 5 1 6 14 7 15 8 14 -55.0  $\pm$  16.5 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-2-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES FCR-2-88 N 384473.8932 E 2317219.191 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/20/88 9/20/88 16. ELEVATION TOP OF BORING -42.9' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.9\_ 0': CLAYEY SAND (SC), medium; dark gray, wet, USCS 1 0 -43.5 0.6 some shell fragments, slightly calcareous. 0.6': CLAY (CH), high plasticity; gray, moist, high plasticity, slightly calcareous. 2 2 -48.4 5.5 5.3': SAND, medium to coarse; gray, Poorly Graded, wet, with shell fragments, calcareous. 5.5': CLAYEY SAND (SC), fine; light greenish brown, moist, calcareous. 3 21

BOTTOM OF BOREHOLE AT -50.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.4

7.5

**Boring Designation** FCR-3-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-3-88 N 385852.9884 E 2318049.944 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/22/88 9/22/88 16. ELEVATION TOP OF BORING -31.6' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.1 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -31.6 0': FAT CLAY (CH), greenish gray, wet, some sand, calcareous. -33.1 1.5 1.5': SILTY LEAN CLAY (CL), light greenish brown, moist, some sand, calcareous. <u>-37.6</u>  $\mp$ 6.0 6': CLAYEY SAND (SC), fine; light greenish brown, moist, trace shell fragments, calcareous. -40.6<sup>+</sup> 9.0 9': LEAN CLAY (CL), light greenish brown, wet, some sand, calcareous.  $-42.1 \pm 10.5$ 10.5': CLAYEY SAND (SC), fine; light greenish brown, moist, calcareous. -48.1 = 16.5 16.5': LEAN SILTY CLAY (CL), light greenish brown, moist, trace shell fragments, calcareous. -51.1 = 19.5 BOTTOM OF BOREHOLE AT -51.1 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** FCR-4-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES FCR-4-88 N 387573.928 E 2318063.674 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL VERTICAL 15. DATE BORING 9/20/88 9/20/88 16. ELEVATION TOP OF BORING -41.3' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.3\_ USCS 0': CLAYEY SAND (SC), fine; light greenish brown, wet, calcareous. 0 1 3': Moist. 2 26 7.5 -48.8 7.5': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, calcareous. 3 18 -50.3+ 9.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.3 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** FCR-5-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-5-88 N 387781.0337 E 2318714.616 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/21/88 9/21/88 INCLINED 16. ELEVATION TOP OF BORING -15.6' MLLW 6. THICKNESS OF OVERBURDEN 34.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -15.6= 0': No recovery -17.1 1.5 1.5': SAND (SP), coarse; gray, Poorly Graded, wet. 1 4 **-18.6**≢ 3.0 3': SILTY SAND (SM), fine to medium; gray, wet, trace clay. 2 19 3 12 4 10 *-*27.6 <del>=</del> 12.0 12': No recovery -29.1<del>=</del> 13.5 13.5': SILTY SAND (SM), fine; gray, wet, trace clay. **-30.6**  $\pm$  **15.0** 15': CLAYEY SAND (SC), fine; tannish gray, wet. 5 11 -32.1 16.5 16.5': FAT CLAY (CH), gray, moist. 6 3 7 4 -38.1<u>±</u>22.5 22.5': CLAYEY SAND (SC), fine; light greenish 8 17 brown, moist, calcareous. 9 26 16 10 -50.1 = 34.5 BOTTOM OF BOREHOLE AT -50.1 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** FCR-6-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-6-88 N 389034.0598 E 2319133.402 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/22/88 9/22/88 INCLINED 16. ELEVATION TOP OF BORING -30.5' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.5 0': FAT CLAY (CH), dark greenish gray, wet, some USCS sand, slightly calcareous. 1 0 -33.5 干 3.0 3': CLAYEY SAND (SC), fine to medium; greenish gray and light brown, wet, some shell fragments, 2 20 calcareous. -35.0 4.5 4.5': SAND (SP), medium; light greenish brown, Poorly Graded, wet, trace silt, and shell fragments. No recovery first attempt 35.0' to 36.5'. Re-drove, then cont'd. to 38.0'. 3 36 7.5': SAND, medium to coarse; light brown. 4 16 -39.5<del>+</del> 9.0 9': SILTY SAND (SM), fine; light gray, with organics. 5 22  $-41.0 \pm 10.5$ 10.5': CLAYEY SAND (SC), fine; light greenish brown, moist, trace shell fragments. 6 21 7 28 28 8 -50.0 = 19.5 BOTTOM OF BOREHOLE AT -50.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-7-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-7-89 N 388922.908 E 2318238.456 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/3/89 5/3/89 INCLINED 16. ELEVATION TOP OF BORING 38.6' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING -22.1 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.6 0': FAT CLAY (CH), dark gray to black. USCS 1 0 35.6 <del>+</del> 3.0 3': LEAN SILTY CLAY (CL), light greenish brown, some sand, calcareous. 2 4 3 20 29.6 9.0 9': CLAYEY SAND (SC), fine; light greenish brown, calcareous. 26 4 28.1 ‡ 10.5 10.5': LEAN SILTY CLAY (CL), light greenish brown, some sand, calcareous. 5 22 6 20  $22.1 \pm 16.5$ BOTTOM OF BOREHOLE AT 22.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-8-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-8-89 N 388304.0022 E 2318645.536 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/14/89 5/14/89 16. ELEVATION TOP OF BORING -40.6' MLLW 6. THICKNESS OF OVERBURDEN 14.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.6\_ 0': LEAN SILTY CLAY (CL), light greenish brown, USCS some sand, calcareous, trace of dark grey to black sandy, clayey silt from 40.6' to 40.9' ... Used Zeogel drilling mud. 1 22 2 30 3 20 4 23 <u>-54.7 1</u>4.1 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-9-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-9-89 N 386311.9833 E 2318115.87 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/15/89 5/15/89 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 13.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.6\_ 0': CLAYEY SAND (MH), dark gray to black, some USCS sand, slightly calcareous. 0 1 -45.9 4.3 2 4.3': LEAN SILTY CLAY (CL), light greenish brown, 0 some sand, calcareous. 3 16 23 4 BOTTOM OF BOREHOLE AT -55.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** MB-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES MB-1-88 N 362477.4846 E 2328253.391 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 9/30/88 9/30/88 16. ELEVATION TOP OF BORING -41.3' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': LEAN SILTY CLAY (CL), olive green, with shell -41.3\_ USCS fragments, calcareous. 7 1 16 16 2 34 6': SILTY, trace sand. 30 3 29 <u>-50.3 † 9.0</u> BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** MB-2-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL MB-2-90 N 360948.6754 E 2329120.626 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 5/13/90 5/13/90 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ 0': LEAN CLAYEY SILT (ML), olive green, moist, USCS calcareous. 1 2 2 16 3 12 4 12 5 15 6 19 9': Trace shell fragments. 7 19 8 16 9 16 <u>-55.6</u> 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** MB-3-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL MB-3-90 N 360785.6115 E 2328745.66 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/12/90 4/12/90 -42.7' MLLW 16. ELEVATION TOP OF BORING 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.7 0': LEAN SILT (ML), olive green, moist, calcareous. USCS 10 1 14 2 3 22 4.5': Some shell fragments. 4 14 5 19 6 20 9': CLAYEY, no shell fragments. 7 16 8 12 -54.7 + 12.0 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

NC-S-C-NORTH-99

								Boring De	signation	1 NC-3	-C-IN	<u> </u>
DRILLING LO	OG	DIVISION			STALL					SHEE		
		South Atlantic D	ivision					arbor YSTEM		OF : VERT		EETS
1. PROJECT	or Entr	ance Channel Dee	noning					South Carolin	na NAD83		ICAL MLLW	
Chanesion Harbi	OI EIIII	ance Chamilei Dee	pering	_				OF BIT N/A	147 (D00	<del></del> '	VILL V V	
2. HOLE NUMBER	:100	CATION COORDINATES						ER'S DESIGNATIO	N OF DRILL			
		1 377424.988 E 2						neric	TO DIVILLE			
3. DRILLING AGENCY				12	. TOT	AL SA	MPLE	S D	ISTURBED	UNDIS	TURBED	)
General Enginee	ring						0		0		0	
4. NAME OF DRILLER				13	. TOT	AL NU	JMBEI	R CORE BOXES	0			
T. Pickett 5. DIRECTION OF BORI	NG	: DEG FROM	BEARING	<u> </u>	. ELE\	/ATIC	N GR	OUND WATER	NA			
VERTICAL INCLINED		VERTICAL	DE / II (III C	15	. DATI	BOF	RING	STARTE 2	D 2/10/99	COMPLET 2/1	ED 0/99	
6. THICKNESS OF OVER	RBURDE	N 7'	•	16	. ELE\	/ATIC	N TO	P OF BORING	-17.3' M			
7. DEPTH DRILLED INTO	O ROCK	5.5'						ECOVERY FOR B		Α		
8. TOTAL DEPTH OF BC	ORING	29.8'		18				ID TITLE OF INSPI <b>kette</b>	ECTOR			
							1 40	NOILO			-	<u>o</u>
ELEV DEPTH G	I	FIELD CLASSIFICATION (Description)			% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-17.6 0.3	D': SILT	(OH), tan, wet, soft, "p	ouff-mud".									
<b>+ //</b>	<b>0.25'</b> : SI	LTY CLAY (OH), black	k, wet, soft.									
$\pm$												
$\pm$												
-19.3 + 2.0												
± ///2	2': SILT	Y CLAY (OH), black, s	emi-soft.									
± <b>//</b> /												
± //												
± ///												
<b>+</b> ///												
<b>+</b> ///												
-22.3  5.0												
± ///	5': SILT	Y CLAY (OH), black, fi	rm.									
± ///												
<b>+ //</b>												
± (//)												
-24.3 + 7.0					1							
$\pm$												
$\pm$												
<u> </u>												
<u> </u>												
+	BOTTON	M OF BOREHOLE AT	-29 8 ft			l						
· .	NOTE: 9	Soile vieually field class	sified in accordance	•								- 1

NC-S-G-NORTH-99

								Boring De	esignation	<u> NC-S</u>	G-N	<u>ORT</u>
DRILLING L	OG	DIVISION			STALL				<del></del>	SHE	ET ·	1
	.00	South Atlantic	Division					arbor			1 SH	EETS
1. PROJECT		Ob						уѕтем South Caroli	no NADOS		TICAL MLLW	, [
Charleston Hart	bor Enti	rance Channel De	eepening	-					na NAD83	<b>:</b>	IVILLVV	
O LIOUE NUMBER	:10	CATION COORDINATI	-0					OF BIT N/A ER'S DESIGNATI	ON OF DRILL			
2. HOLE NUMBER		N 375561.52 E 2						neric	ON OF DRILL			
3. DRILLING AGENCY		1 07 000 1.02 L 2	.010104.000		TOT				DISTURBED	UNDIS	TURBE	
General Engine						0, .	0	:	0		0	
4. NAME OF DRILLER				13.	TOTA	AL NU	IMBEI	R CORE BOXES	0	•		
T. Pickett				14.	ELE\	/ATIO	N GR	OUND WATER	NA			
5. DIRECTION OF BOR	RING	DEG FROM VERTICAL	BEARING					START		COMPLET	ED	
INCLINED		-		15.	DATE	BOF	RING		2/15/99		15/99	
6. THICKNESS OF OVE	FRBURDE	EN 8	'	16.	ELE\	/ATIO	N TO	P OF BORING	-25.3' M	LĹW		
				17.	TOT	AL CC	RE R	ECOVERY FOR				
7. DEPTH DRILLED IN	TO ROCK	1.5	•	18.				ID TITLE OF INS	PECTOR			
8. TOTAL DEPTH OF B	BORING	34.8	1		7		Puc	kette				
O N		FIELD CLASSIFICATION	ON OF MATERIALS		0/2	Samp No.					t /s/	N-Value
ELEV DEPTH 9		(Descrip			% REC	amp	RQD %		REMARKS		Blows/ 0.5 ft	-\ -\
- <del>25.6</del> 0.3	ד וופ ייח	(OH), tan, wet, "puf	f mud"			S	-				+	
-23.0			ack, saturated, "puff									
	mud".	1211 02/11 (011), 51	don, odtaratod, pari									
-27.3 + 2.0												
-27.5 2.0	2': SILT	Y CLAY (OH), black	. moist. semi-soft.									
± //		· //	,									
± //												
<b>+</b>												
<b>+</b> ///												
<b>=</b> ///												
-30.3 + 5.0	5'· SII T	Y CLAY (OH), black	firm									
± ///	0.0121	1 02/11 (011), black	,									
± 1//												
± //												
T (//)												
<b>+</b> ///												
-33.3 + 8.0												
<del></del>	ВОТТО	M OF BOREHOLE A	AT -34.8 ft					1				

Boring Designation NC-S-G-SOUTH-99

							Boring D	esignation	1/1/	J-5-G-8	500	וע
DDII LING I	00	DIVISION	IN:	STALI	ATIO	N				SHEET	1	
DRILLING I	LUG	South Atlantic Division					arbor			or 1 s	HEE	TS
1. PROJECT							YSTEM		: \	VERTICAL		
Charleston Har	bor Ent	rance Channel Deepening		State	Pla	ne -	South Caro	lina NAD83		MLL\	N	
			10	. SIZE	AND	TYPE	OF BIT N/A					
2. HOLE NUMBER		CATION COORDINATES					R'S DESIGNAT	ION OF DRILL				
NC-S-G-SOUT	H-99 I	N 375279.896 E 2319499.851		Vibra	acore	e Ge	neric					
3. DRILLING AGENCY			12	. TOT	AL SA	MPLE	S	DISTURBED	U	NDISTURBI	ED	
General Engine						0		0		0		
4. NAME OF DRILLER			13	. TOT	AL NU	JMBEI	R CORE BOXES	0				
T. Pickett 5. DIRECTION OF BO	DINO	DEC FROM : DEADING	14	. ELE	/ATIC	N GR	OUND WATER	NA				
VERTICAL INCLINED	KING	DEG FROM BEARING VERTICAL	15	. DAT	E BOF	RING	STAR	TED 2/15/99	СОМІ	PLETED 2/15/99	)	
6. THICKNESS OF OW	/FRBURD		16	. ELE	/ATIC	N TO	P OF BORING	-26.8' ML	ĹW			
		<u> </u>	17	TOT	AI CC	)RF R	ECOVERY FOR	BORING N/A				_
7. DEPTH DRILLED IN	ITO ROCE	1'					ID TITLE OF IN		•			
8. TOTAL DEPTH OF	BORING	34.8'					kette	. 20.0				
Q.					_							<u>p</u>
ELEG DEPTH GEN		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %		REMARKS		Blows/	11 0:0 0:10// [A	ν-ν ν-ν
<u>-<del>2</del></u> 6.8 0.3		(OH), tan, wet, soft.		-								
T 7/	<b>0.25</b> ': S	SILTY CLAY (OH), black, saturated, soft,										
$\perp$	"puff m	ud".										
+ //												
-28.8 + 2.0												
T ///	2': SIL7	Y CLAY (OH), black, moist, semi-soft.										
T 7/												
T 7/												
T 7/2												
-30.8 + 4.0												
+ ///	4': SIL7	Y CLAY (OH), black, moist, firm.		1								
ļ <i>[///</i>	(											
<u> </u>												
T T T T T T T T T T T T T T T T T T T												
ļ <i>1//</i>												
-33.8 + 7.0				1								
	DOTTO	M OF POPELIOLE AT 24 9 #			J							

BOTTOM OF BOREHOLE AT -34.8 ft

**Boring Designation** NC-S-J-NORTH-99

			_				Borning Designation	110-0-		
DRILLING	LC	OG DIVISION South Atlantic Division	1	STALI			larbor	SHEE		1 
1. PROJECT		JOURN ARIANNE DIVISION					YSTEM	OF '		CE 13
	arbo	or Entrance Channel Deepening					South Carolina NAD83		1LLW	·
			1				OF BIT N/A			
2. HOLE NUMBER		LOCATION COORDINATES					ER'S DESIGNATION OF DRILL			
NC-S-J-NOR I  3. DRILLING AGENC		-99: N 374485.944 E 2320142.472		Vibra . TOT.			eneric ES : DISTURBED	LINDICT	ווססכו	$\longrightarrow$
General Engin		erina	12	. 101	AL SA	0	ES DISTURBED	UNDIST	0 0	, I
4. NAME OF DRILLE		9	13	. TOT	AL NU		R CORE BOXES 0	<del></del>		
T. Pickett			14	. ELE	/ATIC	N GF	ROUND WATER NA			
5. DIRECTION OF BO VERTICAL	ORIN	ING DEG FROM BEARING VERTICAL					STARTED	COMPLETE	D	
INCLINED			15	. DAT	E BOI	RING	2/10/99		0/99	
6. THICKNESS OF O	VER	RBURDEN 9'	16	. ELE	/ATIC	N TC	P OF BORING -20.8' MLL	.W		
7. DEPTH DRILLED I	INTC	O ROCK 5'	l				RECOVERY FOR BORING N/A			
8. TOTAL DEPTH OF	= BO	ORING 34.8'	18				ND TITLE OF INSPECTOR			
									t. s/	e e
ELEA DELLH GE		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	Rab %	REMARKS		Blows/ 0.5 ft	N-Value
-20.8 0.3		0': SILT (OH), tan, wet, "puff mud".		1						
<b> </b>	0	<b>0.25':</b> SILTY CLAY (OH), black, saturated, "puff mud".								
<b> </b>	7	indu .								
-22.8 + 2.0										
-22.6 2.0	2	2': SILTY CLAY (OH), black, moist, semi-soft, "puff	:	1						
	n	mud".								
	Ź									
<b> </b>										
-27.8 + 7.0	$^{\prime\prime}$									
	7	7': SILTY CLAY (OH), black, moist, semi-firm.		1						
	2									
-29.8 + 9.0										
-23.0 3.0				1						
<b> </b>										
‡										
1 +										
<b> </b>										
<b> </b>										
‡										
· '	В	BOTTOM OF BOREHOLE AT -34.8 ft		_	-					
		NOTE: Soils visually field classified in accordance								

Boring Designation NC-S-J-SOUTH-99

	DIVIDIONI	LINIOT	A I I A	TION	_	Donning De	Signation			
DRILLING LOG	DIVISION  South Atlantic Division	INSTA				arbor		SHE	1 sн	1 =====
1. PROJECT	South Atlantic Division					YSTEM			TICAL	CEIS
Charleston Harbor I	Entrance Channel Deepening	Sta	ate l	Plai	ne -	South Caroli	na NAD83		MLLW	'
						OF BIT N/A				
	LOCATION COORDINATES					ER'S DESIGNATI	ON OF DRILL			
3. DRILLING AGENCY	N 374233.974 E 2320411.15	12. TO				neric	DISTURBED	HINDIS	TURBE	$\dashv$
General Engineerin	g	12. 1	JIAL	_ 0/1	0	-5	0	ONDIC	0	
4. NAME OF DRILLER		13. TO	DTAL	NUI	MBEI	R CORE BOXES	0	•		
T. Pickett 5. DIRECTION OF BORING	: DEG FROM : BEARING	14. EI	LEVA	OITA	N GR	OUND WATER	NA			
VERTICAL INCLINED	VERTICAL	15. D	ATE I	BOR	ING	START	ED 2/10/99	COMPLET 2/	TED 10/99	
6. THICKNESS OF OVERBL	JRDEN 8'					P OF BORING	-21.8' MI			
7. DEPTH DRILLED INTO R	оск 5'					RECOVERY FOR		4		
8. TOTAL DEPTH OF BORIN	NG 34.8'	- 18. SI				ID TITLE OF INSI kette	PECTOR			
ELEA DEBLH GEND	FIELD CLASSIFICATION OF MATERIALS			S		- Notio	REMARKS		Blows/ 0.5 ft	N-Value
	(Description) SILT (OH), tan, wet, "puff mud".	RI	EC	Sam	RQD %		KLIMAKKO		Blo 0.5	>-Z
	5': SILTY CLAY (OH), black, saturated, "puff	-1								
± // muc										
<b>1</b>										
-24.8  3.0										
3': 8	SILTY CLAY (OH), black, moist, semi-soft.									
-27.8 + 6.0										
	SILTY CLAY (OH), firm.									
<b> </b>	, ,,									
-29.8 + 8.0										
1 ‡										
1 ±										
1 =										
I										
ВО	TTOM OF BOREHOLE AT -34.8 ft					•				
NO.	TE: Soils visually field classified in accordance									
with	the Unified Soil Classification System									
1										

**Boring Designation** NC-S-K-NORTH-99

DRILLING LOG   South Atlantic Division   Charleston Harbor   Sheets   1
Charleston Harbor Entrance Channel Deepening  State Plane - South Carolina NAD83 MLLW  10. SIZE AND TYPE OF BIT N/A  11. MANUFACTURER'S DESIGNATION OF DRILL  Vibracore Generic  3. DRILLING AGENCY General Engineering  12. TOTAL SAMPLES O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2. HOLE NUMBER LOCATION COORDINATES N.CS.K-NORTH-99 N 373580.22 E 2321124.05  3. DRILLING AGENCY General Engineering 12. TOTAL SAMPLES DISTURBED 0 0 0 0  4. NAME OF DRILLER T. Pickett 13. TOTAL NUMBER CORE BOXES 0  T. Pickett 14. ELEVATION GROUND WATER NA  STARTED 2/11/99 2/11/99  6. THICKNESS OF OVERBURDEN 6.5' 16. ELEVATION TOP OF BORING 2/11/99 2/11/99  6. TOTAL DEPTH OF BORING 35.3' 17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TYPE OF BIT N/A  11. MANUFACTURER'S DESIGNATION OF DRILL VIDEOUS PORTION OF DRILL VIDEOUS PORTION OF DRING N/A  12. TOTAL SAMPLES DISTURBED UNDISTURBED ON 0 0 0  4. NAME OF DRILLER T. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  15. DATE BORING STARTED 2/11/99 2/11/99  6. THICKNESS OF OVERBURDEN 6.5' 16. ELEVATION TOP OF BORING N/A  18. SIGNATURE AND TYPE OF BRILL VIDEOUS PORTION OF MATERIALS (Description) N/A  18. SIGNATURE AND TYPE OF BRILL VIDEOUS PORTION OF MATERIALS REMARKS NEW N/A  18. SIGNATURE AND TITLE OF INSPECTOR TAPP PUCKETTE  Trap Puckette  19. COMPLETED 2/11/99 2/11/99  19. COMPLETED 2/11/99 2/11/99  10. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR TAPP PUCKETTE  Trap Puckette  19. COMPLETED 2/11/99 2/11/99  10. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR TAPP PUCKETTE  Trap Puckette  19. COMPLETED 2/11/99  2. SILT (OH), tan, wet, "puff mud".  10. 25°: SILT (OH), black, saturated, soft, "puff mud".  10. 25°: SILT (CHY, OH), black, moist, soft.
2. HOLE NUMBER NC-S-K-NORTH-99 N 373580.22 E 2321124.05  3. DRILLING AGENCY General Engineering  4. NAME OF DRILLER T. Pickett  5. DIRECTION OF BORING VERTICAL INICINED  6. THICKNESS OF OVERBURDEN  6. THICKNESS OF OVERBURDEN  7. DEPTH DRILLED INTO ROCK  8. TOTAL DEPTH OF BORING  8. TOTAL DEPTH OF BORING  9. DEPTH OF BORING (Description)  10. 25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  10. 25': SILTY CLAY (OH), black, moist, soft.  11. MANUFACTURER'S DESIGNATION OF DRILL  Vibracore Generic  12. TOTAL SAMPLES  13. TOTAL NUMBER CORE BOXES  0  14. ELEVATION GROUND WATER  NA  15. DATE BORING  16. ELEVATION TOP OF BORING  17. TOTAL CORE RECOVERY FOR BORING  18. SIGNATURE AND TITLE OF INSPECTOR  Trap Puckette  19. PEMARKS  10. STARTED  2/11/99  2/1/99  2/11/99  2/11/99  2/11/99  2/11/99  2/11/99  2/11/99  2/11/9
NC-S-K-NORTH-99 N 373580.22 E 2321124.05  3. DRILLING AGENCY General Engineering  4. NAME OF DRILLER T. Pickett  5. DIRECTION OF BORING VERTICAL INCLINED  6. THICKNESS OF OVERBURDEN  7. DEPTH DRILLED INTO ROCK  8. TOTAL DEPTH OF BORING O'SILT (OH), tan, wet, "puff mud".  O'SILTY CLAY (OH), black, saturated, soft, "puff mud".  -28.3 1.5  1.5': SILTY CLAY (OH), black, moist, soft.
3. DRILLING AGENCY General Engineering 4. NAME OF DRILLER T. PICKERT 5. DIRECTION OF BORING VERTICAL INCLINED 6. THICKNESS OF OVERBURDEN 6. TOTAL DEPTH OF BORING TOTAL DEPTH OF BORING O': SILT (OH), tan, wet, "puff mud".  O': SILTY CLAY (OH), black, moist, soft.  12. TOTAL SAMPLES 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
General Engineering  4. NAME OF DRILLER T. Pickett  5. DIRECTION OF BORING VERTICAL INCLINED  6. THICKNESS OF OVERBURDEN  6. TOTAL DEPTH OF BORING  8. TOTAL DEPTH OF BORING  9. 13. TOTAL NUMBER CORE BOXES  14. ELEVATION GROUND WATER  15. DATE BORING STARTED 2/11/99  16. ELEVATION TOP OF BORING 7. TOTAL CORE RECOVERY FOR BORING 17. TOTAL CORE RECOVERY FOR BORING 18. SIGNATURE AND TITLE OF INSPECTOR Trap Puckette  ELEV DEPTH  9. 2
4. NAME OF DRILLER T. Pickett  5. DIRECTION OF BORING
T. Pickett  5. DIRECTION OF BORING VERTICAL  INCLINED  6. THICKNESS OF OVERBURDEN  6. THICKNESS OF OVERBURDEN  6. TOTAL DEPTH OF BORING  FIELD CLASSIFICATION OF MATERIALS (Description)  7. DEPTH DEPTH OF SILTY CLAY (OH), black, saturated, soft, "puff mud".  -28.3 1.5  -30.3 3.5
5. DIRECTION OF BORING  VERTICAL  INCLINED  15. DATE BORING  VERTICAL  15. DATE BORING  STARTED  2/11/99  16. ELEVATION TOP OF BORING  7. DEPTH DRILLED INTO ROCK  2'  17. TOTAL CORE RECOVERY FOR BORING  8. TOTAL DEPTH OF BORING  9. SILT (OH), tan, wet, "puff mud".  16. ELEVATION TOP OF BORING  17. TOTAL CORE RECOVERY FOR BORING  Trap Puckette  REMARKS  9. Silt (OH), tan, wet, "puff mud".  18. SIGNATURE AND TITLE OF INSPECTOR  Trap Puckette  19. Silt (OH), tan, wet, "puff mud".  19. Silt (OH), tan, wet, "puff mud".  10. 25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  15. SILTY CLAY (OH), black, moist, soft.
VERTICAL VERTICAL STARTED 2/11/99 15. DATE BORING 2/11/99 2/11/99 2/11/99  6. THICKNESS OF OVERBURDEN 6.5'  7. DEPTH DRILLED INTO ROCK 2'  8. TOTAL DEPTH OF BORING 35.3'  FIELD CLASSIFICATION OF MATERIALS (Description)  O': SILT (OH), tan, wet, "puff mud".  0.25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  -28.3 1.5  -30.3 3.5
6. THICKNESS OF OVERBURDEN 6.5'  7. DEPTH DRILLED INTO ROCK 2'  8. TOTAL DEPTH OF BORING 35.3'  FIELD CLASSIFICATION OF MATERIALS (Description)  9.25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  -28.3 1.5  -30.3 3.5
7. DEPTH DRILLED INTO ROCK 2'  8. TOTAL DEPTH OF BORING 35.3'  FIELD CLASSIFICATION OF MATERIALS (Description)  FIELD CLASSIFICATION OF MATERIALS (Description)  O': SILT (OH), tan, wet, "puff mud".  -28.3 1.5  -30.3 3.5  17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR  Trap Puckette  REMARKS  O': SILTY CLASSIFICATION OF MATERIALS (Description)  Trap Puckette  REMARKS  O': SILTY CLAY (OH), black, saturated, soft, "puff mud".  1.5': SILTY CLAY (OH), black, moist, soft.
8. TOTAL DEPTH OF BORING  35.3'  Trap Puckette  ELEV DEPTH  DEPTH
8. TOTAL DEPTH OF BORING  STELD CLASSIFICATION OF MATERIALS (Description)  STELD CLASSIFICATION OF MATERIALS (Description)  O': SILT (OH), tan, wet, "puff mud".  O.25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  1.5': SILTY CLAY (OH), black, moist, soft.
FIELD CLASSIFICATION OF MATERIALS (Description)  Proceedings of the second of the seco
0': SILT (OH), tan, wet, "puff mud". 0.25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  1.5': SILTY CLAY (OH), black, moist, soft.
0': SILT (OH), tan, wet, "puff mud". 0.25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  1.5': SILTY CLAY (OH), black, moist, soft.
0: SILT (OH), tan, wet, "puff mud". 0.25': SILTY CLAY (OH), black, saturated, soft, "puff mud".  1.5': SILTY CLAY (OH), black, moist, soft.
"puff mud".  -28.3 1.5  1.5': SILTY CLAY (OH), black, moist, soft.  -30.3 3.5
-28.3 1.5 1.5': SILTY CLAY (OH), black, moist, soft.
1.5': SILTY CLAY (OH), black, moist, soft.
-30.3 = 3.5
T 7 2 5' SILTY CLAY (OH) low placticity; black low
plasticity, firm.
The plasticity, little
Ŧ <b>//</b>
$\mp$ $7/2$
-33.3  6.5
+
<del>-</del>
$\pm$
王
<u> </u>

BOTTOM OF BOREHOLE AT -35.3 ft

Boring Designation NC-S-K-SOUTH-99

							Dorning	Designation	<u> </u>	10-5-K	<u> </u>	<u> 1 UC</u>
DRILLING LOG	DIVISION		INS	TALL	ATIOI	N				SHEET	1	
DRILLING LOG	South Atlantic D	ivision	C	har	lesto	n H	arbor			of 1		EETS
1. PROJECT							/STEM			VERTIC		
Charleston Harbor E	intrance Channel Dee	pening	S	tate	Pla	ne -	South Car	rolina NAD83		MI	LLW	
							OF BIT N/A	•				
	LOCATION COORDINATES							ATION OF DRILL				
	N 373479.166 E 2	321324.679					neric					
3. DRILLING AGENCY  General Engineering	1		12.	TOTA	AL SA	MPLE 0	S	: DISTURBED : 0		UNDISTU	RBED 0	)
4. NAME OF DRILLER	,		13.	TOTA	AL NU	MBEI	R CORE BOX	ES 0				
T. Pickett 5. DIRECTION OF BORING	DEG FROM	BEARING	14. 1	ELEV	'ATIO	N GR	OUND WATE	r <b>NA</b>				
5. DIRECTION OF BURING  VERTICAL	: VERTICAL	BEARING	15 DATE BORING STARTED COMPLETE								)	
INCLINED		:	15. DATE BORING 2/11/99 2/11/									
6. THICKNESS OF OVERBUR	RDEN 7'	•	16. ELEVATION TOP OF BORING -26.3' MLLW									
7. DEPTH DRILLED INTO RO	DCK 1.5'		17.	TOTA	AL CO	RE R	ECOVERY FO	OR BORING $N$	Α			
			18. \$		_		ID TITLE OF I	NSPECTOR				
8. TOTAL DEPTH OF BORING	G 34.8'		Щ,			Puc	kette					
ELEV DEPTH E	FIELD CLASSIFICATION (Description	-		% REC	Samp No.	RQD %		REMARKS		i	Blows/ 0.5 ft	N-Value
- <b>26.6</b> 0.3 <b>0</b> ': S	ILT (OH), tan, wet, soft, "p	ouff mud".	_									
	: SILTY CLAY (OH), blac mud".	k, saturated, soft,										
	SILTY CLAY (OH), black	moist, semi-soft.										
	ILTY CLAY (OH), low pla	sticity; black, low										
BOT	TOM OF BOREHOLE AT	-34.8 ft										

BOTTOM OF BOREHOLE AT -34.8 ft

**Boring Designation** NC-S-M-NORTH-99

DRILLING I	00	DIVIS	ION		IN:	STAL	ATIC	N	Dorning Doorgination	SHEI	ET ·	1
DRILLING L	<u> </u>	So	uth Atlantic D	ivision					larbor		1 sh	EETS
1. PROJECT		. 4	Channal Dan						YSTEM - South Carolina NAD83		TCAL MLLW	,
Charleston Har	bor Er	ntrance	Channel Dee	pening	-				E OF BIT N/A	: '	VILLVV	
2. HOLE NUMBER	: [	OCATION	N COORDINATES		- 1				ER'S DESIGNATION OF DRILL			
NC-S-M-NORT									eneric			
3. DRILLING AGENCY					12	. тот	AL SA	MPLE	•	UNDIS		)
General Engine 4. NAME OF DRILLER					10			0	0	<b>:</b>	0	
T. Pickett					-				R CORE BOXES 0			
5. DIRECTION OF BOI	RING		DEG FROM	BEARING	14	. ELE	VATIC	ON GR	ROUND WATER NA	- COMPLET		
			VERTICAL		15	. DAT	E BOI	RING	STARTED 2/11/99	COMPLET	1/99	
6. THICKNESS OF OV	FRBUR	DEN	. 8'	•	16	. ELE	VATIC	OT NC	P OF BORING -20.8' M		,	
7. DEPTH DRILLED IN			6'		17	. тот	AL CO	ORE R	RECOVERY FOR BORING N/	Ά		
8. TOTAL DEPTH OF E			34.8'		18				ND TITLE OF INSPECTOR			
	DORING							Puc	ckette			Φ
ELEV DEPTH P		FIELD	CLASSIFICATION (Description	-		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	<b>81</b>	T (OLI)	(Description				Sar	ް.			<u>B</u> 0	Ż
-27.8 0.3			tan, wet, soft, "p	outf mud". k, saturated, soft,	/	1						
	"puff r		DEAT (OIT), black	t, saturateu, sort,								
<b>+</b> ///												
	<b>2.5'</b> : N	∕loist.										
± 1//												
± ///												
<u> </u>												
± //												
T 7/	<b>5.5'</b> : S	SILTY CL	AY, and clay.									
<b> </b>												
T ///												
-28.8 + 8.0												
-28.8 8.0						1						
<b> </b>												
+												
+												
$oxed{\pm}$												
‡												
王												
$\pm$												
	BOTT	OM OF	BOREHOLE AT	-34.8 ft			1		1		1	
	NOTE	: Soils v	risually field class	sified in accordance								
			ed Soil Classifica									- 1

NC-S-M-SOUTH-99

		10101	1 13 14		4 TI O		Boring Designation	110-5-101-3	
DRILLING LO	10	IVISION South Atlantic Division		STALL Char			larbor	SHEET OF 1 S	1 HEETS
1. PROJECT		Court Maritie Biviolori					YSTEM	: VERTICAL	LL.10
Charleston Harbo	r Entrar	nce Channel Deepening	,	State	Pla	ne -	South Carolina NAD83	MLLV	٧
		, ,	10.	SIZE	AND	TYPE	OF BIT N/A	-	
2. HOLE NUMBER		TION COORDINATES 372649.669 E 2322643.353					ER'S DESIGNATION OF DRILL		
3. DRILLING AGENCY	99 11 3	672049.009 E 2322043.333		TOT.				UNDISTURBE	<u>-D</u>
General Engineer	ring		12.	. 1017	AL OA	0	DISTORBED 0	0	
4. NAME OF DRILLER	<u> </u>		13.	. TOT	AL NU	JMBEI	R CORE BOXES 0	-	
T. Pickett 5. DIRECTION OF BORIN	ıg	: DEG FROM : BEARING	14.	ELE\	/ATIC	N GR	ROUND WATER NA		
✓ VERTICAL     ☐ INCLINED		VERTICAL	15.	. DATE	BOF	RING	2/11/99	OMPLETED 2/11/99	
6. THICKNESS OF OVERI	BURDEN	7'	16.	ELE\	/ATIC	N TO	P OF BORING -22.3' MLLV	<i>I</i>	
7. DEPTH DRILLED INTO	ROCK	4.5'					RECOVERY FOR BORING N/A		
8. TOTAL DEPTH OF BOF	RING	33.8'	<del>-</del> 18.				ND TITLE OF INSPECTOR Skette		
ELEV DEPTH	FIE	ELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %		Blows/ 0.5 ft	N-Value
- <del>22</del> .6 0.3 0'	': SILT (C	PH), tan, wet, soft, "puff mud".							
		Y CLAY (OH), black, saturated, soft,							
	ouff mud"	•							
± ///									
± 2'	': Moist.								
± <b>//</b> /									
<b>+</b> ///									
± 1//									
<u> </u>									
± ///									
± ///									
5'	': SILTY	CLAY, and clay, firm.							
<b>+ //</b>									
<b>+</b> //									
<b>+</b> //									
-29.3 7.0									
$\pm$									
+									
_									
<b>+</b>									
‡									
+									
<del></del>	OTTONA	OF BOREHOLE AT -33.8 ft							<b>」</b> ┃
N	IOTE: So	ils visually field classified in accordance							l

with the Unified Soil Classification System

				Boring Designation	NC-S-N		<u> </u>				
DRILLING LOG  DIVISION South Atlantic Division	INSTAL				SHEET						
South Atlantic Division				arbor	of 1	SHI	EETS				
1. PROJECT	9. COOI				VERTIC	AL					
Charleston Harbor Entrance Channel Deepening	State	e Pla	ne -	South Carolina NAD83	<u> </u>	LLW					
	1			OF BIT N/A	•		7				
2. HOLE NUMBER LOCATION COORDINATES	11. MAN	IUFAC	TURE	ER'S DESIGNATION OF DRILL							
NC-S-N-NORTH-99 N 372447.789 E 2323065.106	Vibr	acore	e Ge	eneric							
3. DRILLING AGENCY	12. TOT	AL SA	MPLE	S DISTURBED	UNDISTU	RBED	)				
General Engineering			0	0		0					
4. NAME OF DRILLER	13. TOT	AL NU	JMBE	R CORE BOXES 0							
T. Pickett	14. ELE	VATIC	N GR	OUND WATER NA							
5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL					COMPLETED	)					
INCLINED : VERTICAL	15. DATE BORING 2/11/99 2/11/99										
6. THICKNESS OF OVERBURDEN 7'	16. ELEVATION TOP OF BORING -24.8' MLLW										
•	_			RECOVERY FOR BORING N/A	••						
7. DEPTH DRILLED INTO ROCK 3'				ND TITLE OF INSPECTOR							
8. TOTAL DEPTH OF BORING 34.8'				kette							
	<del>'</del>	<del></del>	. 40			,	Φ				
ELEV DEPTH B FIELD CLASSIFICATION OF MATERIALS	% REC	Samp No.	ر ۾ ا	REMARKS		Blows/ 0.5 ft	N-Value				
(Description)	REC	San	RQD %		ī	₩ ci	ź				
_ <del>25.8</del> 0.3 0': SILT (OH), tan, wet, soft, "puff mud".	7										
<b>0.25':</b> SILTY CLAY (OH), black, saturated, soft,											
"puff mud".											
$\pm$ $\frac{1}{2}$											
2': Moist, semi-soft.											
Z. Moist, Serii-Soit.											
‡ <b>//</b>											
± <b>//</b> /											
<u> </u>											
+ ///											
‡ <b>//</b>											
± 1/2 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =											
5': SILTY CLAY, low plasticity; low plasticity, and clay, firm.											
tiay, iiiii.											
± //											
+ (//											
-31.8 $\mp$ 7.0											
+											
<del> </del>											
‡											
‡											
<u> </u>											
<del>-</del>											
BOTTOM OF BOREHOLE AT -34.8 ft		-									

Boring Designation NC-S-N-SOUTH-99

		DIVISION	1111	TALL	A TIO	. N. I	Borning Designation	110-0-		
DRILLING L	.OG	South Atlantic Division		STALL Char			arbor	SHEET OF 1		
1. PROJECT			9. (	COOF	RDINA	TE S	YSTEM	VERTION	CAL	
Charleston Harl	oor Entr	rance Channel Deepening	_				South Carolina NAD83  FOR BIT N/A		ILLW	
2. HOLE NUMBER	: LO	CATION COORDINATES	1				ER'S DESIGNATION OF DRILL			-
NC-S-N-SOUTH		N 372315.857 E 2323209.762	١	Vibra	acor	e Ge	eneric			
<ol><li>DRILLING AGENCY General Engine</li></ol>	orina		12.	. TOT	AL SA	MPLE 0	ES DISTURBED 0	UNDIST	URBEI 0	
4. NAME OF DRILLER	cririg		13.	. TOT	AL NU		R CORE BOXES 0	<del>-:</del>		
T. Pickett	NNO	DEC FROM DEADING	14.	ELE\	/ATIC	N GR	ROUND WATER NA			
5. DIRECTION OF BOF VERTICAL INCLINED	KING	DEG FROM BEARING VERTICAL	15.	. DATI	E BOI	RING	STARTED 2/11/99	COMPLETE 2/11		
6. THICKNESS OF OVI	ERBURDE	EN 8'	-				P OF BORING -22.3' MLL	W		
7. DEPTH DRILLED IN	TO ROCK	4.5'					RECOVERY FOR BORING N/A ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF E	ORING	34.8'	7 10.				kette			
ELEV DEPTH G		FIELD CLASSIFICATION OF MATERIALS (Description)	•	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
- <del>22</del> .6 0.3		(OH), tan, wet, soft, "puff mud".								
	<b>0.25':</b> S "puff mu	ILTY CLAY (OH), black, saturated, soft, ud".								
	<b>1.5'</b> : Mo	vist, semi-soft.								
<b> </b>										
-26.3 + 4.0										
± ///	4': SILT	Y CLAY (OH), low plasticity; black, low								
<b> </b>	piasticity	y, and clay, firm.								
-30.3 + 8.0										
1 = 1										
1 +										
1 ‡										
+										
1 ±										
+										
	вотто	M OF BOREHOLE AT -34.8 ft			1		l			- 1
	NOTE: 3	Soils visually field classified in accordance Unified Soil Classification System								

**Boring Designation** NC-S-Q-North-99

												DOI	iiig D	esign	ation		J-U-		Olui	
ויםת	LLIN	G 1	$\sim$	<u> </u>	DIVISION			IN	STALL	ATIO	N					7:	SHEET	Γ -	1	
וואט ן	LLIN	G L	U	3	South At	lantic Divisio	า	(	Char	lest	on H	arbor					of 1	SH	EETS	
1. PROJE	СТ			·								YSTEM				: \	VERTIO			
Charle	eston	Hark	oor	Entra	ance Chani	nel Deepenin	ıg	L ;	State	Pla	ne -	South	n Caro	lina NA	D83	<u>:</u>	M	ILLW	<u>'</u>	
						·	•	10	. SIZE	AND	TYPE	OF BIT	N/A							
2. HOLE N	IUMBEI	R			ATION COOR			11	. MAN	UFAC	TURE	ER'S DE	SIGNAT	ION OF D	RILL					
NC-S-			99	: N	371610.59	97 E 232750	00.67		N/A					_						
3. DRILLIN								12	. TOT	AL SA		S		DISTURI		UN	NDIST		)	
Gener			erir	ng							0				0	<u>:</u> _		0		
4. NAME C		LLER						13	. TOT	AL NU	JMBEI	R CORE	BOXES	0						
T. Picl 5. DIRECT			INIC		: DEC E	OM : DE A	DINC	14	. ELE\	/ATIC	N GR	OUND	WATER	NA						
5. DIRECT			KIING	,	: DEG FI : VERTIO	CAL :	ARING	Ī.,	D. 4 T.				STAR	TED		COM	COMPLETED			
	LINED							15. DATE BORING 3/10/99 3/10/9												
6. THICKN	IESS O	F OVE	ERB	URDEN	ν	10'		16. ELEVATION TOP OF BORING -20.5' MLLW												
7. DEPTH	DRILLE	ED IN	TO F	ROCK		5'		17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR												
0. TOTAL	DEDTU		001	INIO				18		_			E OF INS	SPECTOR	!					
8. TOTAL	DEPTH		ORI	ING		35.5'				<u> </u>	Puc	kette								
ELEV D	EPTH	EGEND		F	TELD CLASSI	FICATION OF MA	ATERIALS		%	8				REMAR	OKC.			ws/	alue	
ELEV  D	ן חוץ שי	EG			(	(Description)			REC	Samp No.	RQD %			KEWA	KNS			Blows/ 0.5 ft	N-Value	
\- <del>2</del> 0.5	03/	1/1	0':	SII TY	CLAY (OH)	, black, saturate	ed. verv soft			1		USC	<u></u>				-			
1 20.0/1	0.0_			uff muc		, Diagni, Garanan	ou, rely coll	- 1												
-23.0	25		0.2	2 <b>5'</b> : SIL	TY CLAY (C	)H), black, wet,	soft.			2										
1			2.5	5': SILT	ΓΥ CLAY (ΟΙ	H), black, moist	, soft.		1		1									
1 1		4/								3										
-26.0	5.5	///																		
_						H), black, and c	lay, low													
			pla	sticity.																
≢										4										
≢										7										
≢																				
-30.5	10.0	///																		
重																				
I ‡																				
1 🕸																				
$\vdash$					4.0E.B.0DEL															

BOTTOM OF BOREHOLE AT -35.5 ft

**Boring Designation** NC-S-Q-SOUTH-99

	ILLIN	C I	OG	DIVIS				STALL			Dorning Doorgination	SHEE		1		
		GL	-06	So	uth Atlantic Di	vision		Char			OF 2 SHEETS					
1. PROJ		Har	hor E	ntrance	Channel Deep	nenina					YSTEM - South Carolina NAD83		ICAL <b>/ILLW</b>	,		
Cital	1631011	ııaı	DOI L	Intrance	Charmer Deep	Sering	_				E OF BIT N/A	_ <del>:</del>				
	S-Q-SC	UT	H-99		N COORDINATES 934.961 E 23	324508.593	11	. MAN Vibra	UFAC	TURI e Ge	ER'S DESIGNATION OF DRILL eneric					
3. DRILL	.ing age eral En			1			12	. TOT	AL SA	MPLE 0	ES DISTURBED 0	UNDIST	TURBEI 0	D		
4. NAME	OF DRII			<u> </u>			13. TOTAL NUMBER CORE BOXES 0									
	ckett					·	_				ROUND WATER NA					
	ERTICAL ICLINED		RING		DEG FROM VERTICAL	BEARING	15	. DAT	BOF	RING	:STARTED :	COMPLETE 2/1	ED 2/99			
6. THICK	(NESS O	F OV	ERBU	RDEN	12'	•	16	. ELE	/ATIC	OT NO	P OF BORING -15.3' MLL	Ν				
7. DEPT	H DRILLE	ED IN	TO RC	OCK	6.5'		17. TOTAL CORE RECOVERY FOR BORING N/A									
8. TOTA	8. TOTAL DEPTH OF BORING 33.8'										ND TITLE OF INSPECTOR Ckette					
	DEPTH	GEND			CLASSIFICATION			% REC	<u>o</u>				Blows/ 0.5 ft	N-Value		
45.0		Ĕ			(Description			INLO	San	R&B			<u>a</u> o	ź		
15.6 			<b>0.25</b> "puff		tan, wet, soft, "p											
-21.3	- - - - - - - - - - - - - - - - - - -		<b>6'</b> : S	ILTY CLA	ιΥ (OH), low plas	ticity; black, moist,										
-27.3	- 12.0		low p	olasticity,	and clay, firm.											

**Boring Designation** NC-S-Q-SOUTH-99

DDII LING	10	C (Cont Choot)	INSTAL	LATIC	•	SHE	Т	2		
DRILLING	LO	G (Cont Sheet)	Cha	Charleston Harbor						HEETS
PROJECT			COORD	COORDINATE SYSTEM HORIZONTAL						
Charleston	Har	bor Entrance Channel Deepening	State	e Pla	AD83	MLLW		/		
LOCATION COO	RDIN	ATES	ELEVATION TOP OF BORING							
N 371934.9	E 2324508.593	-15.3'								
ELEV DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARK	'S		Blows/ 0.5 ft	N-Value

BOTTOM OF BOREHOLE AT -33.8 ft

**Boring Designation** NC-S-R-NORTH-99

DRILLING L	OG	DIVISION	dala.			ATIO		arker	SHEET	1				
1. PROJECT		South Atlantic Div	VISION	Charleston Harbor OF 1 SHEETS  9. COORDINATE SYSTEM : VERTICAL										
Charleston Harb	or Entr	rance Channel Deep	pening	_				South Carolina NAD83  OF BIT N/A		LW				
2. HOLE NUMBER NC-S-R-NORTH		CATION COORDINATES 371889.334 E 23	24790.571	11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL						
3. DRILLING AGENCY General Engine	erina			12.	TOT	AL SA	MPLE 0	DISTURBED U	INDISTUI )	RBED	)			
4. NAME OF DRILLER	cing			13. TOTAL NUMBER CORE BOXES 0										
T. Pickett 5. DIRECTION OF BOR	ING	DEG FROM	BEARING	14. ELEVATION GROUND WATER NA										
VERTICAL INCLINED		VERTICAL		15. DATE BORING STARTED COMPLETED 2/12/99 2/12/99										
6. THICKNESS OF OVE	RBURDE							P OF BORING -19.8' MLLW						
7. DEPTH DRILLED INT				17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR										
8. TOTAL DEPTH OF B	ORING	34.8'		L			Puc	kette			0			
ELEV DEPTH CHAPT		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS	) 2000 I O	Blows/ 0.5 ft	N-Value			
-20.8 0.3 	<b>0.25':</b> S "puff mu													
-24.8 + 5.0		t, semi-soft.												
-28.8 + 9.0	<b>5</b> ': SILT low plas	Y CLAY (OH), low plast	icity; black, moist,											
	вотто	M OF BOREHOLE AT	34.8 ft			,								
		Soils visually field class Unified Soil Classificati												

Boring Designation NC-S-R-SOUTH-99

DRILLING	1.00	DIVISION				ATIO		Borning Boorgination	SHEE		1			
	DRILLING LOG South Atlantic Division						Charleston Harbor OF 1 SHEETS							
1. PROJECT		01 15						YSTEM South Carolina NAD93	: VERTI		,			
		rance Channel Dee <sub>l</sub>		10.	SIZE	AND	TYPE	- South Carolina NAD83 E OF BIT N/A	; IV	<u>1LLW</u>				
	H-99 1	CATION COORDINATES N 371873.607 E 23	325031.296	٧	/ibra	core	e Ge	ER'S DESIGNATION OF DRILL eneric						
3. DRILLING AGENCY  General Engine	eering			12. TOTAL SAMPLES DISTURBED UNDISTURBED 0 0										
4. NAME OF DRILLEF T. Pickett	₹		-	13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA										
5. DIRECTION OF BC	RING	DEG FROM VERTICAL	BEARING	STARTED COMPLETED										
INCLINED  6. THICKNESS OF O	/ERRI IRDI	EN 12'						2/12/99 : OP OF BORING -18.8' MLLW		2/99				
7. DEPTH DRILLED IN				17. TOTAL CORE RECOVERY FOR BORING N/A										
8. TOTAL DEPTH OF		34.8'		18.	SIGN	ATUF	RE AN	ND TITLE OF INSPECTOR Ckette						
ELEV DEPTH		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %			Blows/ 0.5 ft	N-Value			
-19.8 0.3	<b>0'</b> ∙ SII T	(OH), tan, wet, soft, "p				Sar	× °			B ∪	Ż			
+ 0.3		ILTY CLAY (OH), black		$\neg 1$										
	<b>2'</b> : Mois	st, semi-soft.												
		.,												
	<b>5':</b> Firm													
	<b>5</b> ": Firm													
<b>1</b>														
	.1													
-26.8 + 8.0														
	8': SILT	Y CLAY (OH), low plas sticity, and clay, firm.	ticity; black, moist,											
		,,												
-30.8 + 12.0														
<b>=</b>														
I														
<b>I</b>														
<b>l</b>														
<b> </b>														
	вотто	M OF BOREHOLE AT	-34.8 ft	_				I .						
	NOTE:	Soils visually field class	ified in accordance											
	with the	Unified Soil Classificat	ion System											

**Boring Designation** NC-S-U-NORTH-99

		DIVISION		INIST	ΓΔΙΙ	ATIO	NI	Dorning Designati	SHEE	-U-IN			
DRILLING LO	OG	South Atlantic Div						arbor		- <sup>1</sup> 1 sн	I EETS		
1. PROJECT								YSTEM	VERT	ICAL			
Charleston Harb	or Entra	ance Channel Deep	ening					South Carolina NAD8 OF BIT N/A	3 : 1	MLLW			
2. HOLE NUMBER	LOC	CATION COORDINATES						ER'S DESIGNATION OF DRIL	L				
NC-S-U-NORTH		371290.532 E 23	26711.016	V	ibra	core	e Ge	neric	_				
<ol> <li>DRILLING AGENCY</li> <li>General Engines</li> </ol>	erina			12. TOTAL SAMPLES DISTURBED UNDISTURBED 0 0									
4. NAME OF DRILLER	Jillig			13. TOTAL NUMBER CORE BOXES 0									
T. Pickett	1110	DEO EDOM		14. ELEVATION GROUND WATER NA									
5. DIRECTION OF BORI  VERTICAL	ING	DEG FROM VERTICAL	BEARING	15 DATE POPING STARTED COMPLET									
☐ INCLINED			:					2/15/99		5/99			
6. THICKNESS OF OVE	RBURDE		-						MLLW N/A				
7. DEPTH DRILLED INT	O ROCK	4'						ID TITLE OF INSPECTOR	IN/A				
8. TOTAL DEPTH OF BO	ORING	29.8'				rap		kette					
ELEV DEPTH ON THE PROPERTY OF	F	FIELD CLASSIFICATION ( (Description	-	F	% REC	Samp No.	RQD %	REMARKS	i	Blows/ 0.5 ft	N-Value		
	<b>0</b> ': SILT	(OH), tan, wet, soft, "pu	iff mud".	$\rightarrow$		0)							
		LTY CLAY (OH), black,	moist, soft, "puff	$\neg$									
± ///	mud".												
	2': Semi-	-soft.											
$\pm$													
± ///													
± ///													
	<b>5':</b> Firm.												
# ///													
± 7/2													
$\equiv$													
<b>主</b>													
± //													
<u> </u>													
± ///													
± 2/1													
王 //													
± 1/2													
-25.8 12.0													
<u> </u>													
<u> </u>													
‡													
+	BOTTO*	A OE BODELOUE AT	20 8 ft										
		M OF BOREHOLE AT -											
,	NOTE: S with the I	Soils visually field classi Unified Soil Classification	fied in accordance on System										
											- 1		

Boring Designation NC-S-U-SOUTH-99

		DIVIDION	LINI	OT 4 1 1	A TIO	N 1	Dorning Designation	NO-5-C					
DRILLING L	OG	South Atlantic Division		STALI Chai			larbor	SHEET OF 1					
1. PROJECT		Codin / tildritic Division	9.	COOF	DINA	TE S	YSTEM	VERTICA	AL				
Charleston Harb	or Ent	rance Channel Deepening	<u> </u>				South Carolina NAD83  FOR BIT N/A	<u> </u>	LLW				
2. HOLE NUMBER NC-S-U-SOUTH		CATION COORDINATES N 371170.322 E 2326814.62	11	. MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL						
3. DRILLING AGENCY			12	. TOT	AL SA			UNDISTU		)			
General Engine  4. NAME OF DRILLER	ering		12	0 : 0 : 0 13. TOTAL NUMBER CORE BOXES 0									
T. Pickett			14				ROUND WATER NA						
5. DIRECTION OF BOR VERTICAL INCLINED	RING	DEG FROM BEARING VERTICAL	·	. DAT				OMPLETED 2/15/					
6. THICKNESS OF OVE	ERBURDI	 EN 12'	16	. ELE	/ATIC	N TO	P OF BORING -21.8' MLLW						
7. DEPTH DRILLED IN	TO ROCK						RECOVERY FOR BORING N/A						
8. TOTAL DEPTH OF B	ORING	34.8'	18	18. SIGNATURE AND TITLE OF INSPECTOR  Trap Puckette									
ELEV DEPTH		FIELD CLASSIFICATION OF MATERI (Description)	ALS	% REC	Samp No.	RQD %			Blows/ 0.5 ft	N-Value			
-21.8	ד ווף ייח	Y CLAY (OH), black, moist, semi-s	eoft		SS	œ.			m O	Ż			
± ///	U. SILI	T CLAT (OTT), black, moist, semi-	5011.										
+ ///													
I ± ///													
$\pm$ ///													
± (//													
± (//													
<b> </b>													
I + ///													
$\pm$													
$\pm$ ///													
$\pm$													
	6': Firm												
<b> </b>													
T (//													
$\pm$													
$\pm$													
-33.8 + 12.0													
-33.6 12.0													
+													
		M OF BOREHOLE AT -34.8 ft											
	NOTE: with the	Soils visually field classified in acc Unified Soil Classification System	ordance I										
1													
1													
1										l			
1										l			
										l			
										ı			

**Boring Designation** NC-S-X-NORTH-99

	1/2	IVISION				ATIO			orgination	SHEE		1
DRILLING LC	76	South Atlantic	Division					arbor			2 sн	EETS
1. PROJECT		<u> </u>						YSTEM	NADOO	: VERTI		,
Charleston Harbo	or Entrar	nce Channel De	eepening					South Caroli	าล เพลบชิง	: IV	1LLW	
2. HOLE NUMBER	1.000	TION COORDINATE	- Q					E OF BIT <b>N/A</b> ER'S DESIGNATION	ON OF DRILL			
NC-S-X-NORTH-								eneric	ON OF DRILL			
3. DRILLING AGENCY	•						MPLE		DISTURBED	UNDIST		)
General Engineer	ring			0 0 0								
4. NAME OF DRILLER T. Pickett				13. TOTAL NUMBER CORE BOXES 0								
5. DIRECTION OF BORIN	NG.	: DEG FROM	BEARING	14.	ELE	/ATIO	N GR	ROUND WATER	NA	_		
		VERTICAL	:	15.	DATI	BOF	RING	START		COMPLETE		
INCLINED		<b>:</b>		16		/ATIO	N TO	P OF BORING	2/12/99 -12.3' ML		2/99	
6. THICKNESS OF OVER	RBURDEN	12'		_				RECOVERY FOR E				
7. DEPTH DRILLED INTO	ROCK	9'						ND TITLE OF INSF		<b>\</b>		
8. TOTAL DEPTH OF BO	RING	33.3'						kette	20.0			
ELEV DEPTH US	FIE	ELD CLASSIFICATION	ON OF MATERIALS		0/	No.					/s/ ft	lue
ELEV   DEPTH	1 11	Descrip)			% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-12.6 0.3	'' SII T (C	DH), tan, wet, soft,	"nuff mud"			Ø	-					
			ack, saturated, soft,									
	puff mud"		,,									
I ‡ ///_												
I ± //1	.5': Moist	, semi-soft.										
± //												
<b>1</b>												
$\frac{1}{2}$	.5': Firm.											
<b> </b>												
<b> </b>												
<b>1</b>												
-21.8 = 9.5	FI- OLAN	VEV OIL TV OAND	(OM) fine 4									
	) <b>.5':</b> CLAY lack.	EY SILIY SAND	(SM), fine to medium;									
-24.3 + 12.0												
+ 12.0												
<b> </b>												
+												
+												
I =												
I ±												
<b>I</b>												
+												
CAW FORM 1999												
<b>SAW FORM 1836-A</b> FEB 12	4				E	3ori	ing	<b>Designatio</b>	n NC-S	-X-NOR\$	HE1979	1 of 2

**Boring Designation** NC-S-X-NORTH-99

							Dorning Designation	110-0	- X - I M	<u> </u>
DBII	LINIC	10	C (Cant Chapt)	INSTA	LLATI	NC		SHEE	Τ ;	2
ואטן	LING	LU	G (Cont Sheet)	Ch	arles	ton H	larbor	OF	2 SH	IEETS
PROJE	СТ			COOR	E SYS	_ : VERT	ICAL			
Cha	ırleston	Har	bor Entrance Channel Deepening	Sta	te Pl	ane		ИLLW	,	
LOCAT	ION COO	RDIN	ATES	ELEV	TION	TOP C	OF BORING			
N 370785.228 E 2327105.23										
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-										

BOTTOM OF BOREHOLE AT -33.3 ft

**Boring Designation** NC-S-X-SOUTH-99

DRII I INI	G I	റദ	DIVISIO				STALL				<u>ooigilatioi</u>	SHEE	T ′	1	
DRILLING LOG South Atlantic Division  1. PROJECT									arbor YSTEM			2 sh	EETS		
1. PROJECT  Charleston I	Hark	or Entr	rance (	Channel De	epening					South Caro	lina NAD83	VERT	ICAL <b>/ILLW</b>		
Chanosish		)	anoo	0114111101 20	opormig					OF BIT N/A		•			
2. HOLE NUMBER				COORDINATES						ER'S DESIGNAT	ION OF DRILL				
3. DRILLING AGE		1-99; r	N 3706	046.196 E 2	2327147.611		VIDTA TOT			neric	DISTURBED	UNDIST	URREI	$\overline{}$	
General Eng	gine	ering				0 0 0									
4. NAME OF DRIL T. Pickett	LER					13.	TOT	AL NU	IMBEI	R CORE BOXES	0	•			
5. DIRECTION OF	BOR	RING	:	DEG FROM	BEARING	14.	ELE	/ATIO	N GR	OUND WATER	NA				
				VERTICAL		15.	DATI	BOF	RING	STAR	TED 2/12/99	COMPLETI 2/1	ED 2/99		
6. THICKNESS OF	= O\/E		;	12'	<del></del>	16.	ELE\	/ATIO	N TO	P OF BORING	-12.8' M		2/33		
7. DEPTH DRILLE				6'		17.	TOT	AL CO	RE R	ECOVERY FOR					
						18.				ID TITLE OF INS	SPECTOR				
8. TOTAL DEPTH		ORING		30.8'				rap	Puc	kette			_	Φ.	
ELEV DEPTH	LEGEND		FIELD C	CLASSIFICATIO (Descript	N OF MATERIALS ion)		% REC	Samp No.	%		REMARKS		Blows/ 0.5 ft	N-Value	
-13.8 0.3	1//			et, soft, "puff r											
‡		<b>0.25':</b> S "puff mu	ILTY CI ıd".	LAY (OH), blad	ck, saturated, soft,										
#		<b>1.5':</b> Mo	ist, sen	ni-soft.											
‡															
王															
+ + + + + + + + + + + + + + + + + + +	//														
+															
<u> </u>		4.51.5													
#		<b>4.5':</b> Fire	m.												
<b>±</b>															
王															
‡															
主	//														
#															
#															
Ŧ															
‡ /															
王															
#															
+															
$\mp$	///														
-24.3 <del>+</del> 11.5	//														
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**Boring Designation** NC-S-X-SOUTH-99

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DDILLING LOC (Cont Choot)	INSTALLATION		SHEET 2
DRILLING LOG (Cont Sheet)	Charleston Harbor	OF 2 SHEETS	
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW
LOCATION COORDINATES	ELEVATION TOP OF BORING	•	•
N 370646.196 E 2327147.611	-12.8'		
ELEV DEPTH ED STEELD CLASSIFICATION OF MATERIALS (Description)	Samp No.	REMARKS	Blows/ 0.5 ft N-Value

BOTTOM OF BOREHOLE AT -30.8 ft

**Boring Designation** NCR-1-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-1-88 N 380379.168 E 2317996.802 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/16/88 9/16/88 16. ELEVATION TOP OF BORING -25.3' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.3 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -25.3-0': CLAYEY SAND (SC), fine to medium; dark gray, USCS wet, slightly calcareous. 1 0 2 5 4.5': CLAYEY SAND, fine to medium; light greenish brown, moist, calcareous. 3 21 18 21  $-34.3 \pm 9.0$ 9': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, trace shell fragments, calcareous. 4 25  $-35.8 \pm 10.5$ 10.5': FAT CLAY (CH), light greenish brown, moist, calcareous. 5 22 12': Trace sand. 19 15 -40.3 = 15.0 15': CLAYEY SAND (SC), fine; light greenish brown, moist, calcareous. 6 20 27 24 7 27 31 8 18  $-49.3 \pm 24.0$ BOTTOM OF BOREHOLE AT -49.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-10-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-10-89 N 380016.0722 E 2317376.88 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/4/89 6/4/89 16. ELEVATION TOP OF BORING -32.4' MLLW 6. THICKNESS OF OVERBURDEN 22.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.4 0': LEAN CLAY (CL), light grayish green, moist, with USCS shell fragments, some silt, calcareous. 0 1 5 9 0 2 5 13 -41.5 9.1 9.1': LEAN SAND (ML), olive green, with shell fragments, calcareous. 3 14 18 19 4 16 16 13 5 12 10 6 14 -55.0  $\pm$  22.6 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-11-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-11-89 N 379846.2082 E 2318126.881 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/21/89 5/21/89 16. ELEVATION TOP OF BORING -28.2' MLLW 6. THICKNESS OF OVERBURDEN 26.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -28.2 0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 2 1 0 9.9': Gray. 2 8 5 3 14.4': Dark gray, with organics. 3 1 8 17.4': Trace sand. 6 -47.6 19.4 19.4': SAND (ML), olive green, with shell fragments, 4 26 calcareous. 20 13 15 5 14 -54.8 ‡ 26.6 BOTTOM OF BOREHOLE AT -54.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NCR-12-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-12-89 N 379409.1434 E 2317672.964 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/22/89 5/22/89 16. ELEVATION TOP OF BORING -33' MLLW 6. THICKNESS OF OVERBURDEN 22.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33 0 0': CLAYEY LEAN SILT (ML), olive green, moist, USCS calcareous. 1 28 21 19 2 14 16 13 3 17 18 12.3': Trace sand. 15 15 4 15 11 5 13 14 6 14 <u>-55.8</u>‡22.8 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-13-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-13-89 N 379348.2455 E 2318247.954 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/22/89 5/22/89 16. ELEVATION TOP OF BORING -35.6' MLLW 6. THICKNESS OF OVERBURDEN 19.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.6 0': FAT CLAY (CH), soft; dark gray. USCS 0 1 6 0 2 9 0 14.7': Gray. 4 16.2': With sand. 3 3 -53.3 🕸 17.7 17.7': LEAN SILT (ML), olive green, with shell 4 9 <u>-54.8</u> 19.2 BOTTOM OF BOREHOLE AT -54.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-14-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 379865.1668 E 2317892.886 NCR-14-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/18/90 1/18/90 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.9\_ 0': CLAYEY SAND (SC), fine to medium; gray, with USCS organics. NOTE: Wash return had large chunks of 1 wood. Suspect driving through log on 3 bottom of harbor. Wood was very wet and soft. 3': SAND, fine; no organics, slightly calcareous. 2 1 4.5': SAND, fine to medium; trace gravel, calcareous. 3 11 5.2': CLAYEY SAND, fine; olive green, trace gravel, calcareous. 4 19 5 16 9 6 7 10 8 17 9 21 -55.9 + 15.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-15-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES NCR-15-90 N 380751.0935 E 2317638.756 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL VERTICAL 15. DATE BORING 1/18/90 1/18/90 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ USCS 0': CLAYEY SAND (SC), fine; olive gray, calcareous. 1 3 2 22 3 23 4 22 5 17 6 20 7 14 8 19 9 10 -55.6 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-16-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-16-90 N 381840.0116 E 2317377.596 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 11 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/12/90 1/12/90 -38.8' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 David Belville, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.8 0': FAT SANDY SILT (MH), fine; olive green. USCS 1 11 2 14 3 16 20 4 5 14 6 13 7 12 8 11 9 13 10 14 11 14 <u>-55.3</u> <sup>‡</sup> 16.5 BOTTOM OF BOREHOLE AT -55.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-17-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-17-90 N 382943.9615 E 2317305.426 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 1/12/90 1/12/90 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.4' David Belville, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.9\_ USCS 0': FAT SANDY SILT (MH), fine; olive green. 6 1 2 18 3 15 4 14 5 12 6 11 9': FAT SILT, olive gray. 7 13 8 11 9 11 -54.4 + 13.5BOTTOM OF BOREHOLE AT -54.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-2-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-2-88 N 381908.0616 E 2317678.574 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/15/88 9/15/88 16. ELEVATION TOP OF BORING -26.1' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -26.1-0': CLAYEY SAND (SC), fine to medium; dark gray, USCS 1 12 -27.6= 1.5 1.5': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, calcareous. 2 24 17 22 3 31 27 4 20 20 23 5 27 33 36 -45.6 <del>1</del>19.5 19.5': CLAYEY SAND (SC), fine; light greenish 22 6 brown, moist, calcareous. 18 7 16  $-50.1 \pm 24.0$ BOTTOM OF BOREHOLE AT -50.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-3-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-3-88 N 383034.0141 E 2317626.4 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/19/88 9/19/88 16. ELEVATION TOP OF BORING -24' MLLW 6. THICKNESS OF OVERBURDEN 27' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51' James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -24 0': CLAYEY SAND (SC), fine to medium; brown and USCS 1 6 dark gray, wet, slightly calcareous. -25.5 1.5 1.5': LEAN SILTY CLAY (CL), light greenish brown, 2 31 moist, some sand, calcareous. 20 4.5': Trace sand. 15 3 27 7.5': No sand. 26 26 18 4 12': Some sand. 19 25 5 18 28 29 -43.5<sup>±</sup> 19.5 19.5': CLAYEY SAND (SC), fine; light greenish 6 19 brown, moist, calcareous. 20 22 24': Trace shell fragments. 14 -49.5 = 25.5 25.5': LEAN SILTY CLAY (CL), light greenish 7 18 brown, moist, some sand, trace shell fragments, -51.0  $\pm$  27.0 calcareous. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -51.0 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NCR-4-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-4-89 N 383411.8868 E 2316968.366 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/16/89 5/16/89 16. ELEVATION TOP OF BORING -40.8' MLLW 6. THICKNESS OF OVERBURDEN 14.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': FAT CLAY (CH), greenish gray. USCS 12 1 -44.9 4.1 4.1': LEAN SILTY CLAY (CL), light greenish brown, some sand, calcareous. 2 26 16 15 3 12 10.1': Trace sand. 15 15 4 14 -55.4 + 14.6 BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NCR-5-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-5-89 N 382619.9065 E 2316924.491 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/16/89 5/16/89 16. ELEVATION TOP OF BORING -39.5' MLLW 6. THICKNESS OF OVERBURDEN 15.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.5\_ 0': FAT CLAY (CH), greenish gray. USCS 0 1 -44.3 4.8 4.8': LEAN SILTY CLAY, light greenish brown, some sand, calcareous. 2 15 15 12 9.3': Trace sand. 3 13 12 13 4 14 BLOWS PER FOOT: Number required -55.3 15.8 to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -54.8 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NCR-6-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-6-89 N 381602.0648 E 2317637.623 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/16/89 5/16/89 16. ELEVATION TOP OF BORING -27' MLLW 6. THICKNESS OF OVERBURDEN 27.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -27 0': LEAN SILTY CLAY (CL), light greenish brown, USCS some sand, calcareous. 15 1 2.1': Trace sand. 14 19 2 14 27 26 3 20 14 16 14.1': Some sand. 25 4 24 25 25 20.1': Trace sand. 20 5 18 14 15 6 19 <u>-54.6</u>  $\pm$  27.6 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-7-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-7-89 N 381345.9864 E 2317136.681 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/18/89 5/18/89 16. ELEVATION TOP OF BORING -31.6' MLLW 6. THICKNESS OF OVERBURDEN 23.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -31.6-0': CLAYEY SILT (ML), olive green, with shell USCS 0 fragments, and gravel, calcareous. 14 1 16 15 14 2 6.8': Trace sand. 16 14 3 18 19 18 4 14 13 15 5 14 13 6 15 -54.9<del>±</del>23.3 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NCR-8-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NCR-8-89 N 380816.1262 E 2317839.739 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/20/89 5/20/89 16. ELEVATION TOP OF BORING -28.8' MLLW 6. THICKNESS OF OVERBURDEN 26.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -28.8 0': SAND (MH), olive green, calcareous. USCS 0 15 1 18 20 2 22 17 8.5': With shell fragments. 16 3 17 16 17 4 23 20 24 5 17 15 17 14 6 14 -55.4 ‡ 26.6 BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NCR-9-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 380459.0571 E 2317373.811 NCR-9-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/5/89 6/5/89 16. ELEVATION TOP OF BORING -37.9' MLLW 6. THICKNESS OF OVERBURDEN 17.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.9 0': LEAN SILT (ML), moist, some sand, calcareous. USCS 0 1 21 21 16 2 25 14 13 3 11 13.5': With shell fragments. 12 11 4 11 <u>-55.8‡1</u>7.9 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NWS-1-96 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2.5" Drag Bit LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-1-96 N 401650 E 2325400 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/1/96 3/1/96 16. ELEVATION TOP OF BORING -42' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 57' 8. TOTAL DEPTH OF BORING N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42 USCS 0': SANDY CLAYEY SILT (ML), gray. 0 1 0 0 0 1 2 1 2 1 1 3 1 3 -46.0 4.0 4': CLAYEY SILTY SAND (SM), fine; gray. 2 1 4 1 3 2 1 5 2 5 7': SILTY SAND, gray. 3 1 6 4 7 3 1 7 2 5 3 2 4 8 8 4 1 9 3 6 3 2 10 5 9 4 <u>-57.0 +</u> 15.0 BOTTOM OF BOREHOLE AT -57.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NWS-1-99 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT N/A 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore Generic NWS-1-99 N 393435.542 E 2327280.966 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED General Engineering 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 T. Pickett 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 6/14/99 6/14/99 16. ELEVATION TOP OF BORING -34.8' MLLW 5' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 1' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 40.8 8. TOTAL DEPTH OF BORING Trap Puckette

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-34.8	-								
-									
-	-								
	_								
-	<u>-</u> -								
	_								

**Boring Designation** NWS-2-96 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2.5" Drag Bit 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 401090 E 2326090 NWS-2-96 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 9 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/29/96 2/29/96 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.1' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ USCS 0': CLAY (CL), dark gray. 0 1 0 0 0 1 2 2 3 1 3': SILTY CLAY, dark green, with gravel. 1 3 0 1 1 1 4 1 2 1 1 6.5': SANDY CLAY, gray. 5 2 5 3 2 8': SILTY SANDY CLAY, gray. 6 2 4 2 2 7 3 5 2 -52.6 \(\preceq\) 10.5 10.5': SILTY CLAYEY SAND (SM), fine; gray, sand 1 clay lenses. 8 2 5 3 2 7 9 2 5 <u>-57.1 +</u> 15.0 BOTTOM OF BOREHOLE AT -57.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

Boring Designation NWS-2-99

DDII I IN	<u> </u>	00	DIVISION	INS	STALI	ATIO	N		SHEET	1	
DRILLIN	G L	.OG	South Atlantic Division	(	Chai	lest	on H	larbor	or 1 s	HEETS	
1. PROJECT			•				_	YSTEM	VERTICAL		
Charleston	PROJECT Charleston Harbor Entrance Channel Deepening  HOLE NUMBER NWS-2-99 N 392976.904 E 2327495.415  DRILLING AGENCY General Engineering  NAME OF DRILLER T. Pickett  DIRECTION OF BORING VERTICAL INCLINED  THICKNESS OF OVERBURDEN  DEPTH DRILLED INTO ROCK  TOTAL DEPTH OF BORING  PIELD CLASSIFICATION OF MATERIALS (Description)			•,	State	Pla	ne -	South Carolina NAD83	MLLW		
				10.	SIZE	AND	TYPE	E OF BIT <b>N/A</b>			
2. HOLE NUMBE	R					-	_	ER'S DESIGNATION OF DRILL			
		<u> </u>	N 392976.904 E 2327495.415			acore					
4. NAME OF DRILLER						AL SA	MPLE		JNDISTURBE	ΕD	
		ering					0	0	0		
	LLER			13.	TOT	AL NU	JMBE	R CORE BOXES 0			
		DINIC	: DEC EDOM : DEADING	14.	ELE'	/ATIC	N GR	ROUND WATER NA			
		KING						STARTED COM	MPLETED		
				15.	DAI	E BOF	RING	6/14/99	6/14/99		
6. THICKNESS O	F OVE	ERBURD	EN 6'	16.	ELE'	/ATIC	N TO	P OF BORING -34' MLLW			
7 DEDTU DDU I	- D INI-	TO DOO!		17.	тот	AL CC	RE R	RECOVERY FOR BORING N/A			
7. DEP IN DRILLE	ווו טב	TO ROCI	1	18.	SIGN	IATUI	RE AN	ND TITLE OF INSPECTOR			
8. TOTAL DEPTH	I OF B	BORING	41'		-	Ггар	Puc	ckette			
	Q.		EIELD CLASSIEICATION OF MATERIALS		%	Š			/s #	<u>e</u>	
ELEV   DEPTH	EGE				REC	Samp No.	Rgb %	REMARKS	Blows/ 0.5 ft	N-Value	
-34		יוס יים	TV CLAY (OH) black to gray caturated "bu	ff		Ø	-			2	
	47.		TT CLAT (OTT), black to gray, saturated, pu	"							
Ŧ	///										
Ŧ											
Ŧ	///										
<b>+</b>		2'- Moi	ot .								
Ŧ		<b>2</b> . IVIOIS	51.								
Ŧ											
Ŧ											
ļ <u></u>											
-38.0 - 4.0		A'ı CII "	TV SAND (SM) brown with ailt firm		-						
Ŧ	·	4. JIL	TT SAND (SW), BIOWH, WILL SIR, IIIII.								
Ŧ	, † <b>,</b> † ,										
<u> </u>	. [   ] .										
-40.0 <u>6.0</u>	• •				1						
±											
+											
		BOTTO	OM OF BOREHOLE AT -41.0 ft								

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-3-96 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2.5" Drag Bit LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-3-96 N 402340 E 2325490 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/2/96 3/2/96 16. ELEVATION TOP OF BORING -40.2' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.2\_ 0': SILT, dark gray. USCS 0 1 0 0 0 1 2': CLAYEY SANDY SILT, gray. 2 0 1 1 1 3 1 2 4': SILTY CLAYEY SAND, gray, with clay lenses. 1 2 4 3 6 3 2 5 2 4 2 2 6 4 8 4 1 7 3 6 3 2 8 2 7 5 2 9 9 3 6 2 7 10 3 4  $-55.2 \pm 15.0$ BOTTOM OF BOREHOLE AT -55.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

Boring Designation NWS-3-99

							Boring Designation	NWS-3	<u> </u>			
DRILLING L	<u> </u>	DIVISION	INS	TALL	ATIO	N		SHEET	•	1		
DRILLING L	UG	South Atlantic Division		Char	lest	on H	larbor	of 1	SH	EETS		
1. PROJECT			9. COORDINATE SYSTEM VERTICAL									
Charleston Harb	or Enti	rance Channel Deepening	State Plane - South Carolina NAD83 MLLW									
			10. SIZE AND TYPE OF BIT N/A									
2. HOLE NUMBER	LO	CATION COORDINATES	11.	MAN	UFAC	TUR	ER'S DESIGNATION OF DRILL					
NWS-3-99	1	N 396393.461 E 2328334.705	\	/ibra	core	e Ge	eneric					
3. DRILLING AGENCY			12.	TOT	AL SA	MPLE	• • •	UNDISTU		)		
General Engine	ering					0	0	<u>:</u>	0			
4. NAME OF DRILLER			13.	TOT	AL NU	JMBE	R CORE BOXES 0					
T. Pickett	INIO	DEC FROM DEADING	14.	ELE\	/ATIC	N GF	ROUND WATER NA					
5. DIRECTION OF BOR VERTICAL	ING	DEG FROM BEARING VERTICAL					:STARTED :C	OMPLETE	)			
INCLINED			15.	DATI	BOF	RING	6/15/99	6/15	/99			
6. THICKNESS OF OVE	RRURDE		16.	ELE\	/ATIC	N TC	P OF BORING -34.4' MLLV	V				
			17.	TOT	AL CC	DRE F	RECOVERY FOR BORING N/A					
7. DEPTH DRILLED INT	O ROCK	1'	18.	SIGN	IATUI	RE AN	ND TITLE OF INSPECTOR					
8. TOTAL DEPTH OF B	B. TOTAL DEPTH OF BORING 40.4'						ckette					
9		FIELD CLASSIFICATION OF MATERIALS			S				τν'	ne		
ELEV DEPTH		(Description)		% REC	Samp No.	R S S S	REMARKS		Blows/ 0.5 ft	N-Value		
-34.4		, ,			Sa	~			<u>m</u> •	Ż		
-34.4	0': SILT	Y CLAY (OH), black to brown, saturated,										
<b>1</b>	puii iiic	iu.										
	2': Mois	t.										
$\perp$												
$\perp$												
	4': SILT	Y CLAY, with sand, firm.										
<b>I</b>												
-39.4 + 5.0												
	вотто	M OF BOREHOLE AT -40.4 ft			1		1					

BOTTOM OF BOREHOLE AT -40.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-4-96 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2.5" Drag Bit 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-4-96 N 402025 E 2326070 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 11 11 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/28/96 2/28/96 INCLINED 16. ELEVATION TOP OF BORING -39.7' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.7 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39.7-0': SILT (OL), soft. USCS 0 0 0 0 1 2 0 1 -42.2 2.5 2.5': SILTY CLAYEY SAND (SM), gray. 1 1 3 1 2 1 1 -44.7  $\mp$ 5.0 5': SILTY SANDY CLAY (CL), fine; gray. 4 2 3 1 2 5 2 4 2 7.5': SILTY CLAYEY SAND (SM), gray, with clay 2 seams. 2 6 4 2 3 7 6 8 2 1 8 2 6 4 2 9 4 7 3 2 2 8 10 6 2 11 4 9 5 BOTTOM OF BOREHOLE AT -57.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

Boring Designation NWS-4-99

							Boring Designation	NWS-4	<del>1-99</del>				
DRILLING L	00	DIVISION	IN	ISTALL	ATIO	N		SHEET		1			
DRILLING	_06	South Atlantic Division		Char	lest	on H	arbor	of 1		EETS			
1. PROJECT			9.	9. COORDINATE SYSTEM VERTICAL									
Charleston Har	bor Entr	ance Channel Deepening		State Plane - South Carolina NAD83 MLLW									
			10	10. SIZE AND TYPE OF BIT N/A									
2. HOLE NUMBER	LO	CATION COORDINATES	11	I. MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL						
NWS-4-99	N	N 395513.663 E 2328282	2.439	Vibra	core	e Ge	eneric						
3. DRILLING AGENCY			12	2. TOT	AL SA		• • •	UNDIST		)			
General Engine						0	0		0				
4. NAME OF DRILLER			13	3. TOT	AL NU	JMBE	R CORE BOXES 0						
T. Pickett	DINO	DEC FROM	14	I. ELE	/ATIC	N GR	ROUND WATER NA						
5. DIRECTION OF BO	RING	DEG FROM BEAR	-				STARTED	COMPLETE	D				
INCLINED			15	5. DAT	E BOF	RING	6/15/99	6/15					
6. THICKNESS OF OV	'ERBURDE		16	S. ELE	/ATIC	N TO	P OF BORING -34.8' MLL	W					
			17	. TOT	AL CC	DRE R	RECOVERY FOR BORING N/A						
7. DEPTH DRILLED IN	ITO ROCK	1'	18	B. SIGN	IATUI	RE AN	ND TITLE OF INSPECTOR						
8. TOTAL DEPTH OF I	BORING	40.8'					kette						
9		FIELD OF AGOIFTON OF MAT	EDIALO		ė				s/	ue			
ELEV DEPTH		FIELD CLASSIFICATION OF MAT (Description)	ERIALS	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value			
Ŭ Ŭ		, ,			Sa	æ.			<u>в</u> )	Ż			
-34.8	<b>0':</b> SILT mud".	Y CLAY (OH), black to dark gra	ay, wet, "puff										
<b>1</b>	mua .												
	[												
$+$ $\frac{1}{2}$	<b>2':</b> Mois	t.											
I													
I													
T ///	4': Black	ς, firm.											
I	(												
-39.8 + 5.0				4									
	ВОТТО	M OF BOREHOLE AT -40.8 ft			'		•			1			

BOTTOM OF BOREHOLE AT -40.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-5-96 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL MLLW Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 10. SIZE AND TYPE OF BIT 2.5" Drag Bit LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-5-96 N 402850 E 2325930 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/5/96 3/5/96 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.9\_ USCS 0': CLAYEY SILT, black. 0 1 0 0 0 1 2 0 1 <u>-43.</u>4 2.5 2.5': SILTY SANDY CLAY (CL), gray. 1 1 3 1 2 1 1 4 3 6 3 1 5 2 4 2 -48.4 7.5 7.5': CLAYEY SAND (SM), gray. 2 6 3 5 2 2 7 4 8 4 2 8 5 11 6 3 9 3 11 8 2 10 3 8 5 -55.9<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -55.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NWS-5-99

							Boring Des	ignation	1 1444	-5-98	<u> </u>		
DDILLING	1.00	DIVISION		INSTALI	ATIO	N			SHE	ET	1		
DRILLING	LOG	South Atlantic Div		Chai		OF		HEETS					
1. PROJECT				9. COORDINATE SYSTEM : VERTICAL									
Charleston Ha	arbor Ent	trance Channel Deep	ening	State Plane - South Carolina NAD83 MLLW									
		·		10. SIZE AND TYPE OF BIT N/A									
2. HOLE NUMBER		OCATION COORDINATES			-	-	ER'S DESIGNATION	OF DRILL					
NWS-5-99		N 402350.549 E 232					neric						
3. DRILLING AGENC				12. TOT	AL SA		ES DIS	STURBED	UNDIS	TURBE	D		
General Engir						0		0	:	0			
4. NAME OF DRILLE	R			13. TOT	AL NU	JMBE	R CORE BOXES	0					
T. Pickett 5. DIRECTION OF BO	ODINO	. DEC EDOM	BEARING	14. ELE	/ATIC	N GR	OUND WATER	NA					
VERTICAL	JRING	: DEG FROM : VERTICAL	:				STARTED		COMPLET	ED			
INCLINED				15. DAT	E BOI	RING	: 6/	15/99	6/	15/99			
6. THICKNESS OF O	VERBURD	EN 5'	•	16. ELE	/ATIC	OT NO	P OF BORING	-35.6' MI	LLW				
7 DEDTU DDU ED	INTO DOG			17. TOT.	AL CC	ORE R	ECOVERY FOR BO	RING N/A	Α				
7. DEPTH DRILLED I	INTO ROCI	<u> </u>		18. SIGN	IATUI	RE AN	ID TITLE OF INSPE	CTOR					
8. TOTAL DEPTH OF	BORING	41.6'					kette						
ELEV DEPTH		FIELD CLASSIFICATION C	_	% REC	Samp No.	RQD %	R	REMARKS		Blows/ 0.5 ft	N-Value		
-35.6 -40.6 5.0	2': Blace 4': With	TY CLAY (OH), black to g											
i	BOLL	OM OF BOREHOLE AT -4	JI 0'. I <del>†</del>										

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-6-96 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2.5" Drag Bit 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-6-96 N 401890 E 2326740 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/2/96 3/2/96 16. ELEVATION TOP OF BORING -37.7' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.7 N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.7\_ USCS 0': SILTY CLAYEY SAND (SM), fine; dark gray. 0 1 0 0 0 0 2 1 1 -40.2 2.5 2.5': SILTY CLAY (CL), gray. 0 1 3 0 1 1 1 2 4 4 2 1 5 1 3 2 2 6 2 4 2 9': SILTY SANDY CLAY, gray. 1 7 3 5 2 3 8 4 8 4 -49.7 + 12.012': SILTY SAND, gray, with clay seams. 2 9 1 4 3 4 10 4 9 5  $-52.7 \pm 15.0$ BOTTOM OF BOREHOLE AT -52.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NIMS-6-99

									Boring De	esignation	<u>1 N</u>	1WS-6			
DRILLING		\ <u>^</u>	DIVISION		IN:	STALL	ATIO	N				SHEET	. ,	1	
DRILLING	LC	JG	South Atlantic	Division	(	Char	lest	on H	arbor			OF 1	SH	EETS	
1. PROJECT					9. COORDINATE SYSTEM								VERTICAL		
Charleston H	arbo	or Entr	ance Channel D	Deepening	State Plane - South Carolina NAD83								MLLW		
					10. SIZE AND TYPE OF BIT N/A										
2. HOLE NUMBER									R'S DESIGNATI	ON OF DRILL					
NWS-6-99		N	I 402159.79 E	2326536.402					neric						
3. DRILLING AGEN					12	. TOT	AL SA	MPLE	S :	DISTURBED	: '	JNDISTU		)	
General Engi		rıng						0	:	0			0		
4. NAME OF DRILLI	ER				13	. TOT	AL NU	IMBEF	R CORE BOXES	0					
T. Pickett 5. DIRECTION OF B	ODIN	10	DEG FROM	BEARING	<del></del> 14	. ELE	/ATIC	N GR	OUND WATER	NA					
VERTICAL	OKII	NG	: VERTICAL	BEARING	1.5	D.4.T.			START	ED	CON	MPLETE	)		
INCLINED					15	. DAT	E BO	RING		6/16/99		6/16	/99		
6. THICKNESS OF	OVER	RBURDE	N -	7'	16	. ELE	/ATIC	N TO	P OF BORING	-33.5' M	LLW				
					17	. TOT	AL CC	RE R	ECOVERY FOR	BORING N/	Ā				
7. DEPTH DRILLED	INTC	ROCK		1'					ID TITLE OF INS						
8. TOTAL DEPTH O	F BO	RING	41.	5'					kette						
9	9						ė						t S⁄	e	
ELEV   DEPTH   {	LEGEND			TION OF MATERIALS		% REC	Samp No.	RQD %		REMARKS			Blows/ 0.5 ft	N-Value	
			(Descr	• •			Sa	8					<u>а</u> О	ż	
-33.5			Y CLAY (OH), blac	k to gray, wet, "puff											
	n	nud".													
	2	!': Moist													
I Ŧ															
I															
	4	l': Black	, firm.												
I															
I ‡ /															
I ‡	//														
-40.5 7.0						-									
<b>I</b> ‡															
<del></del>		OTTO	A OF BODELIOLE	AT 44 5 4			J								

BOTTOM OF BOREHOLE AT -41.5 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-7-96 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2.5" Drag Bit LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-7-96 N 402654 E 2326605 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/29/96 2/29/96 16. ELEVATION TOP OF BORING -41.8' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.8 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.8\_ USCS 0': SILTY CLAY (CL), dark. 0 1 0 1 1 1  $-43.8 \pm 2.0$ 2': CLAYEY SILTY SAND, gray. 2 1 2 1 1 3 1 3 2 1 2 4 5 3 1 5 2 4 2 7.5 -49.3 7.5': SANDY CLAY (CL), gray. 1 6 3 8 5 2 7 2 5 3 2 4 8 8 4 2 9 3 5 2 2 10 7 3 4  $-56.8 \pm 15.0$ BOTTOM OF BOREHOLE AT -56.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

Boring Designation NWS-7-99
INSTALLATION SHEET 1

DR	RILLIN	GI	OG	DIVISION			STALL								SHEE		1
				South Atlantic Di	ivision				on H						OF		EETS
1. PROJ				01 15		_			TE S	_	<sub>ТЕМ</sub> outh Cai	ralina I	111000		: VERTI	CAL <b>1LLW</b>	,
Cha	rieston	Har	bor Enti	rance Channel Dee	pening								NADOS		: 1\	ILLVV	
				0471011 0000001147750							F BIT N/A						
	NUMBEI 3-7-99	R		CATION COORDINATES N 403035.418 E 23					Ge		S DESIGN	ATION C	)F DRILL				
	ING AGE	NCY		1 403033.410 L Z	320112.020				MPLE		5110	DIST	URBED		UNDIST	HRREI	<u> </u>
Gen	eral En	gine	ering			12.	1017	AL OA	0			Dioi	0		ONDIOT	0	
	E OF DRII ickett	LLER				-					ORE BOX		0				
	CTION OF	F BOF	RING	DEG FROM	BEARING	14.	ELE\	/ATIC	N GR	ROU	JND WATE		NA				
⊠v	ERTICAL ICLINED			VERTICAL		15.	DATI	BOF	RING		STA	ARTED 6/16	6/99	CC	OMPLETE 6/1	D 6/99	
6. THIC	KNESS O	FOV	ERBURDE	EN 6'	•	16.	ELE	/ATIC	N TO	)P C	OF BORING	•	-31.8' N				
7. DEPT	H DRILLE	ED IN	TO ROCK	2'							COVERY FO			/A			
0 TOTA	L DEPTH		ODINO	39.8'		18.					TITLE OF I	NSPECT	TOR				
6. TOTA	LDEFIN		JUNING	39.0			<u> </u>		Puc	;ke	eile						Φ.
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %			REI	MARKS			Blows/ 0.5 ft	N-Value
-31.8_ - - - -35.8			mud".  2': Mois  4': SILT	Y CLAY (OH), black to tt.  Y SAND (SM), gray to a or lenses.		ff											
-37.8	6.0																

BOTTOM OF BOREHOLE AT -39.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-8-96 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2.5" Drag Bit 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL **CME 45** NWS-8-96 N 403620 E 2326800 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/3/96 3/3/96 16. ELEVATION TOP OF BORING -37' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37 USCS 0': CLAYEY SILT (OL), soft; dark. 0 1 0 0 0 0  $-39.0 \pm 2.0$ 2': CLAYEY SAND (SC), gray, with shells. 2 0 0 0 0 3 1 2 1 1 4 1 1 0 1 5 2 4 2 2 6 6 14 8 3 7 4 11 7 2 8 3 7 4 2 12.5': CLAYEY SAND, gray. 9 3 6 3 1 10 4 9 5 <u>-52.0 +</u> 15.0 BOTTOM OF BOREHOLE AT -52.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NWS-8-99

								Boring Designation	NWS-8	3-99				
	NO I	00	DIVISION	INS	STALL	ATIO	N		SHEET	•	1			
DRILLI	NG L	-06	South Atlantic Division	(	Char	lest	on H	arbor	of 1	SH	EETS			
1. PROJECT				9. (	COOF	DINA	TE SY	YSTEM	: VERTIC	AL				
Charlesto	n Har	bor En	trance Channel Deepening		State Plane - South Carolina NAD83 MLLW									
				10.	10. SIZE AND TYPE OF BIT N/A									
2. HOLE NUMB		LC	OCATION COORDINATES	11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL						
NWS-8-99	9	:	N 403232.578 E 2328248.552	<u>'</u>   `	Vibracore Generic									
	3. DRILLING AGENCY							S DISTURBED	UNDISTU		)			
General E						0	. 0	<u>:</u>	0					
	4. NAME OF DRILLER							R CORE BOXES 0						
T. Pickett			·	14	ELE\	/ATIC	N GR	OUND WATER NA						
5. DIRECTION (		RING	DEG FROM BEARING VERTICAL					STARTED : C	OMPLETED	)				
INCLINE				15.	DATI	E BOI	RING	6/16/99	6/16					
6. THICKNESS	OE OV	EDBLIDE	EN 3'	16	16. ELEVATION TOP OF BORING -36.3' MLLW									
					TOT	VI CC	DE B	ECOVERY FOR BORING N/A	-					
7. DEPTH DRIL	LED IN	ITO ROC	K 1'					ID TITLE OF INSPECTOR						
8. TOTAL DEPT	TH OF E	BORING	40.3'	10.				kette						
ELEV DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIAL (Description)	.S	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value			
-36.3		0': SIL	TY CLAY (OH), black, saturated, "puf	f mud".										
+		DOTT(	OM OF ROPEHOLE AT -40.3 ft											

BOTTOM OF BOREHOLE AT -40.3 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NWS-9-96 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL MLLW Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 10. SIZE AND TYPE OF BIT 2.5" Drag Bit LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NWS-9-96 N 402565 E 2327490 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Charleston District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 B. Wilson 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/2/96 3/2/96 16. ELEVATION TOP OF BORING -41.5' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.5 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.5\_ USCS 0': SANDY CLAY (CL), dark gray. 1 0 0 0 1 2 1 2 2.5': SILTY SANDY CLAY, dark gray. 1 1 3 1 2 1 1 2 4 3 1 1 5 2 4 2 1 6 2 4 2 2 7 3 5 2 2 11': SILTY CLAY, dark. 8 2 5 3 2 9 2 5 3 2 10 3 6 3  $-56.5 \pm 15.0$ BOTTOM OF BOREHOLE AT -56.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-1-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-1-88 N 377526.4698 E 2319201.2086 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/23/88 9/23/88 16. ELEVATION TOP OF BORING -38.2' MLLW 6. THICKNESS OF OVERBURDEN 17.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -38.2 0': FAT CLAY (CH), dark gray to gray, wet, USCS calcareous. NOTE: Weight of rods drove splitspoon from 38.2' to 48.0' and from 48.0' to 52.0' 0 1 9.8': Gray. 2 4  $-52.5 \pm 14.3$ May have encountered SC material 14.3': (FISHTAILED) see remarks. while fishtail drilling between 53.0' and 53.5'. NA **-**54.0 + 15.8 15.8': CLAYEY FINE SAND (SC), light greenish brown, moist, trace shell fragments, calcareous. 3 14 -55.5 17.3 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.5 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-2-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-2-88 N 378645.1907 E 2317803.0791 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/23/88 9/23/88 INCLINED 16. ELEVATION TOP OF BORING -20.6' MLLW 6. THICKNESS OF OVERBURDEN 30' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) <del>2</del>9.9 ± 0.7 0': CLAYEY GRAVEL (GC), fine to coarse; dark 1 USCS 0 greenish gray, wet, some fine to medium sand, and shell fragments, calcareous. 2 28 0.7': SILTY LEAN CLAY (CL), fine; light greenish brown, moist, some fine sand, calcareous. 3': Trace sand. 10 10 3 13 10 9': Some fine sand. 24 10.5': Trace shell fragments. 4 17 20 13.5': Trace shell fragments. 25 5 23 22 19 19.5': Some fine sand. 6 14 14 21 **-44.6**  $\mp$  **24.0** 24': FINE SAND (SC), light greenish brown, moist, 7 14 calcareous. 24 20 -49.1<u>=</u>28.5 28.5': SILTY LEAN CLAY (CL), light greenish 8 15 brown, moist, some fine sand, trace shell fragments,  $-50.6 \pm 30.0$ calcareous. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.6 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** NYR-3-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-3-88 N 376412.6199 E 2319861.363 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/23/88 9/23/88 -34.8' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 45' 17. TOTAL CORE RECOVERY FOR BORING 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 79.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.8 0': (CH), fine; dark gray to gray, wet, Slightly USCS calcareous. 1 0 10.8': Gray. 2 0 -47.6± 12.8 12.8': Moist. 9 18 <u>-50.1 <del>+</del> 15.3</u> 15.3': Fishtailed from 50.1' to 78.3'

Boring Designation NYR-3-88

DRILLING LOG (Cont Sheet)

PROJECT
Charleston Harbor Entrance Channel Deepening

State Plane

Boring Designation NYR-3-88

SHEET 2
OF 2 SHEETS
COORDINATE SYSTEM HORIZONTAL VERTICAL

Charleston Harbor Entrance Channel Deepening

State Plane

LOCATION COORDINATES ELEVATION TOP OF BOR

LOCATION COORDINATES			ELEVATION TOP OF BORING								
N 376412.6199 E 2319861.363	-	-34.8'									
	TION OF MATERIALS cription)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value				
-78.3 43.5 43.5 43.5': (CH), fine; greenish											

BOTTOM OF BOREHOLE AT -79.8 ft

calcareous to calcareous.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

NAD83

**MLLW** 

3

3

**Boring Designation** NYR-4-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-4-88 N 375607.7758 E 2320610.467 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/24/88 9/24/88 16. ELEVATION TOP OF BORING -33.1' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.1' James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33.1 0': FAT CLAY (CH), gray, wet, some sand, trace USCS shell fragments, slightly calcareous. 1 0 2 6': No sand or shells. 2 4 -40.6 7.5 7.5': CLAYEY SAND (SC), fine to medium; gray, wet, some shell fragments, slightly calcareous. 3 15 9': SAND, medium to coarse. 4 9 -43.6 ‡ 10.5 10.5': FAT CLAY (CH), greenish gray, moist, calcareous. 5 13 19 6 14 16 7 15 -51.1 + 18.0BOTTOM OF BOREHOLE AT -51.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-5-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER NYR-5-88 N 377946.2766 E 2318169.176 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/24/88 9/24/88 16. ELEVATION TOP OF BORING -36.7' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.7\_ USCS 0': FAT CLAY (CH), dark gray to black, wet, slightly calcareous. 0 -41.7<u>+</u> 5.0 5': LEAN SILTY CLAY (CL), light greenish brown, 2 0 moist, some sand, calcareous. 18 3 34 28 31 14 4 -50.2 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.2 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-6-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 376804.4122 E 2318742.337 NYR-6-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/17/90 1/17/90 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.6\_ USCS 0': CLAYEY SAND (SC), fine; gray to greenish gray, calcareous. 1 7 1.5': Slight sulfur odor. 2 8 3 9 4.5': No sulfur odor. 4 9 5 10 6 10 7 13 8 20 9 16 -55.1 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.1 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-7-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-7-90 N 378237.2252 E 2317927.139 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 9 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/17/90 1/17/90 -32.6' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 23.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.6-0': CLAYEY SILT (MH), dark gray to black. USCS NOTE: Material change at last part of first drive from 43.6' ti 43.8'. Sample #1 from 32.6' to 43.6'. 0 1 -43.6 = 11.0 11': CLAYEY SAND (SC), fine; olive green, calcareous. 2 15 16 3 4 20 5 15 6 17 7 14 8 12 9 10 -55.8-123.2 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-8-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-8-90 N 378565.3358 E 2318622.065 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/17/90 1/17/90 16. ELEVATION TOP OF BORING -32.2' MLLW 6. THICKNESS OF OVERBURDEN 23.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.3-0': CLAYEY SILT (MH), dark gray to black, trace USCS sand, and shell fragments. NOTE: Most of Sample #1 taken from material found on outside of drill rod. Sample #2 taken from inside of splitspoon at change of material from 45.4' to 46.4'. The second drive from 46.4' to 47.9' had change of material at 46.4' to 46.9', Sample #3, & from 46.9' to 47.9', Sample #4. 1 0 <u>-45.3</u> 13.1 13.1': FAT CLAY (CH), dark gray to greenish gray, 2 0 <u>-46.3</u> 14.1 trace sand. 14.1': SAND (SP), fine; tannish gray, Poorly 3 0  $-47.1 \pm 14.9$ Graded, trace silt. 4 17 14.9': CLAYEY SAND (SC), fine; olive green, calcareous. 5 22 6 14 7 11 8 12 9 11 -55.3<del>王</del>23.1 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.3 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NYR-9-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL NYR-9-94 N 375955.1012 E 2320008.739 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/21/94 8/21/94 16. ELEVATION TOP OF BORING -46.7' MLLW 6. THICKNESS OF OVERBURDEN 23.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 69.9 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.7-0': FAT CLAY (CH), dark olive gray, trace sand. USCS 1 0 3.3': FAT CLAY, dark gray, no sand. 2 0 6.2': Gray. 0 8.2': Calcareous. 3 10 14 13 4 11 13 18 5 13 15 16 6 18 -69.9+23 BOTTOM OF BOREHOLE AT -69.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** OR-1-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OR-1-88 N 392594.4414 E 2322097.71 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 2/2/88 2/2/88 INCLINED 16. ELEVATION TOP OF BORING -34.4' MLLW 6. THICKNESS OF OVERBURDEN 36.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 71.1' James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -34.4= 0': FAT CLAYEY SILT (MH), dark gray, wet, trace USCS 0 1 -40.6<del>≢</del> 6.2 6.2': FAT CLAY (CH), greenish gray, wet, some 2 6 sand. -42.1 <del>=</del> 7.7 7.7': SILTY SAND (SM), fine to medium; greenish 3 16 gray, wet, trace clay. 4 8  $-45.1 \pm 10.7$ 10.7': CLAYEY SAND (SC), fine to medium; 5 6 -46.6<del>≢</del> 12.2 greenish gray, wet. 12.2': FAT CLAY (CH), greenish gray, moist, trace 6 9 sand, slightly calcareous. 7 8 -49.6<u></u> 15.2 15.2': CLAYEY SAND (SC), fine; greenish gray, 8 8 moist, some clay, slightly calcareous. 9 13 10 5 17 **-55.6 = 21.2** 21.2': Washed w/ fishtail to 71.1'. Wash return to Fishtailed from 55.6' to 71.1' 71.1' contained fat clay. Wash return at 71.1' contained small particles of yellowish-brown, sandy, silty, lean clay. 25.5': Wet. 28.5': Moist. -71.1 <del>=</del> 36.7 BOTTOM OF BOREHOLE AT -71.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** OR-10-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES OR-10-88 N 392676.4766 E 2322315.687 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 2/4/88 2/4/88 16. ELEVATION TOP OF BORING -27.1' MLLW 11.7' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 38.8 James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-	11.7		O': Washed w/ fishtail to 65.9'. Wash return from 27.1' to 65.9' contained greenish-grey, fat clay w/ occassional return of very fine to fine sand. At 65.9', wash return began with trace of small shell fragments then with small particles of yellowish-brown, sandy, lean clay.						

BOTTOM OF BOREHOLE AT -38.8 ft

**Boring Designation** OR-2-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OR-2-88 N 391739.528 E 2322396.833 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 0 15 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 2/3/88 2/3/88 INCLINED 16. ELEVATION TOP OF BORING -24.9' MLLW 6. THICKNESS OF OVERBURDEN 26.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.7 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV DEPTH Samp **REMARKS** RQD % REC (Description) -24.9 0': SILTY SAND (SM), fine to medium; tannish gray, USCS 1 0 wet, trace shells, and clay. -26.2 1.3 1.3': CLAYEY SAND (SC), fine; dark gray, wet. 2 6 2.8': SAND, fine; greenish gray. 3 0 5.8': Moist, slightly calcareous. 4 0 8.8': Trace shells. 5 4 10.3': No shells. 6 3 11.8': Some thick clay layers. 7 4 3 -39.7 = 14.8 14.8': FAT CLAY (CH), greenish gray, moist, some 8 5 16.3': Occasional very thin lenses & lamine of very 7 9 fine to fine sand. 17.8': Trace sand. 10 6 -44.2 19.3 19.3': SILTY SAND (SC), fine; greenish gray, moist. 11 2 12 5 21.8': SAND, fine to medium; trace shell fragments, slightly calcareous. 23.3': Trace gravel. 13 0 13 24.9': LEAN SILTY CLAY (CL), yellowish brown, 14 some sand, calcareous. 15 23 <u>-51.7 ‡ 26.8</u> BOTTOM OF BOREHOLE AT -51.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** OR-3-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OR-3-88 N 391266.3514 E 2321287.957 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/3/88 2/3/88 16. ELEVATION TOP OF BORING -29.4' MLLW 6. THICKNESS OF OVERBURDEN 49 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 78.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -29.4-0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -43.5±14.1 14.1': CC FAT CLAY (CH), greenish gray, moist, slightly calcareous. 2 7 15.6': With shell fragments. 3 8 -46.5<u>±</u>17.1 17.1': CLAYEY SAND (SC), fine; greenish gray, trace shell fragments, several thick, clay layers. 4 3 Slightly calcareous.. 5 8 6 3 7 3 8 5 9 12 -55.5 = 26.1 Fishtailed from 55.5' to 78.4'.

**Boring Designation** OR-3-88 INSTALLATION **DRILLING LOG (Cont Sheet)** Charleston Harbor OF 2 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 391266.3514 E 2321287.957 -29.4' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** RQD % (Description) 26.1': Washed w/ fishtail to 78.4'. Wash return to 78.4' contained fat clay & clayey sand. Wash at 78.4' -78.4± 49.0 contained small particles of yellowish-brown, sandy, silty, lean clay. (continued)

BOTTOM OF BOREHOLE AT -78.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** OR-8-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OR-8-88 N 392606.5187 E 2322538.688 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/4/88 2/4/88 -33.7' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 9.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 43.5 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33.7 0': CLAYEY SAND (MH), dark gray to black, some USCS sand, slightly calcareous. 0 -41.3<sup>-</sup> 7.6 7.6': FAT CLAY (CH), greenish gray, moist. 2 0 -41.8-8.1 8.1': CLAYEY SAND (SC), fine; yellowish brown, dry, some silt. 3 43 -43.5 <sup>-</sup> 9.8 BOTTOM OF BOREHOLE AT -43.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** OR-8-88A DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OR-8-88A N 392595.519 E 2322537.69 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/5/88 2/5/88 INCLINED 16. ELEVATION TOP OF BORING -36.4' MLLW 6. THICKNESS OF OVERBURDEN 22' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.4 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -36.4 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace sand, slightly calcareous. 0 1 -42.7 -43.2 6.3 2 0 6.8 6.3': FAT CLAY (CH), greenish gray, moist, slightly calcareous. 6.8': CLAYEY SAND (SC), fine; yellowish brown, 3 31 moist, some silt, trace shells, calcareous. -44.9 8.5 8.5': LEAN SILTY CLAY (CL), yellowish brown, moist, some sand, calcareous. 38 4 5 25 11.5': Some sand. 6 20 7 26 14.5': Trace shells. 8 22 9 25 17.5': Trace sand. 10 40 29 11 12 54 -58.4 = 22.0 BOTTOM OF BOREHOLE AT -58.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-10-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-10-88 N 392793.3905 E 2321853.689 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/6/88 10/6/88 16. ELEVATION TOP OF BORING -40.5' MLLW 6. THICKNESS OF OVERBURDEN 23' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.5-0': FAT SANDY CLAY (CH), dark gray, wet. USCS Wash cuttings: Dark grey chunks of very 1.5': With shell fragments. fat, slightly sandy w/ shell fragments just before hitting CL; increased sand 0 content just above CL. 1 2 11 2 0 8 -51.0 = 10.5 10.5': Fishtailed -62.0 = 21.5 21.5': LEAN CLAY (CL), olive green, with gravel, and shell fragments, calcareous. 3 61 BOTTOM OF BOREHOLE AT -63.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-11-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-11-88 N 392247.4082 E 2321830.777 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/6/88 10/6/88 16. ELEVATION TOP OF BORING -35.1' MLLW 6. THICKNESS OF OVERBURDEN 33.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 68.4 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.1 0': FAT CLAY (CH), dark gray, wet, with sand. USCS 1 0 8 10 2 4 7 5 <u>-50.1</u> <u>15.0</u> 15': Fishtailed from 50.1' to 66.9' -66.9 = 31.8 31.8': LEAN SILTY CLAY (CL), olive green, with 3 27 gravel, calcareous. -68.4<del>=</del>33.3 BOTTOM OF BOREHOLE AT -68.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-12-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES PT-12-89 N 392239.2879 E 2321144.809 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/11/89 5/11/89 16. ELEVATION TOP OF BORING -42' MLLW 6. THICKNESS OF OVERBURDEN 13.8 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42 0': FAT CLAY (CH), dark gray to greenish black, USCS trace sand, slightly calcareous. 0 1 3.3': Grayish green. 9 2 4.8': Some sand. 2 17 3 0 19 4 2 17 -55.8 + 13.8 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** PT-13-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-13-89 N 391533.187 E 2320410.953 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/13/89 5/13/89 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 13.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -41.6\_ 0': CLAYEY SILT (MH), dark gray to black, trace USCS 0 1 6.6 6.6': FAT CLAY (CH), grayish green, trace sand, 2 0 slightly calcareous. 3 0 8.6': With shell fragments, and sand. 9 10.1': Occasional thin lenses. 4 2 9 -54.7—13.1 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** PT-14-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES PT-14-89 N 389792.9967 E 2318937.29 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/13/89 5/13/89 INCLINED 16. ELEVATION TOP OF BORING -42.8' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.8\_ 0': LEAN SILTY CLAY (CL), light greenish brown, USCS some sand, calcareous. 1 0 20 19 2 25 -48.8<sup>+</sup> 6.0 6': CLAYEY SAND (SC), fine; light greenish brown, calcareous. 3 24 24 -51.8 + 9.0 9': LEAN SILTY CLAY (CL), light greenish brown, some sand, calcareous. 4 20 -53.3  $\mp$  10.5 10.5': CLAYEY SAND (SC), fine; light greenish brown, calcareous. 5 26 -54.8  $\pm$  12.0 BOTTOM OF BOREHOLE AT -54.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-15-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-15-89 N 389792.9967 E 2318937.29 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/12/89 5/12/89 16. ELEVATION TOP OF BORING -42' MLLW 6. THICKNESS OF OVERBURDEN 13.9 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42 0': LEAN SILTY CLAY (CL), fine; light greenish USCS brown, trace sand, calcareous. 0 1 20 1.9': Some sand. 31 2 35 46 24 -49.9<sup>±</sup> 7.9 7.9': CLAYEY SAND (SC), fine; light greenish brown. 47 3 25 23 4 24 -55.9 ‡ 13.9 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-16-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-16-89 N 388663.0269 E 2318864.471 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/11/90 1/11/90 16. ELEVATION TOP OF BORING -30.4' MLLW 6. THICKNESS OF OVERBURDEN 25.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 David Belville, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.4 0': SILTY SAND (SM), fine; light gray to dark gray. USCS 0 1 2 1 -33.0 ‡ 2.6 2.6': FAT SILT (MH), light gray to dark gray. 3 2 4.6': Olive green. 4 5 5 12 6 12 7 11 8 12 9 17 10 11 11 27 12 14 13 13 19.1': Olive green, with sand. 14 11 15 12 16 14 17 16 -55.9 ± 25.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-4-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-4-88 N 390517.2047 E 2320286.119 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/4/88 2/4/88 INCLINED 16. ELEVATION TOP OF BORING -39.5' MLLW 6. THICKNESS OF OVERBURDEN 31' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 70.5 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.5 0': CLAYEY SILT (MH), dark gray to black, trace USCS sand, slightly calcareous. 1 0 -44.5 5.0 -44.8 5.3 2 0 5': CLAYEY SAND (SC), fine to medium; greenish gray, wet, slightly calcareous. 3 11 5.3': FAT CLAY (CH), greenish gray, moist, slightly calcareous. 4 3 6.8': Trace shell fragments. 5 04 6 0 14.3': With shell fragments, trace sand. 7 8 -55.3 = 15.8 15.8': Fishtailed from 55.3' to 66.7'  $-66.7 \pm 27.2$ 27.2': FAT CLAY (CH), greenish gray, moist, 8 4 slightly calcareous. -68.2 28.7 28.7': Fishtailed from 68.2' to 70.5' <u>-70.5 \Rightarrow 31.0</u> BOTTOM OF BOREHOLE AT -70.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-5-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-5-88 N 390099.1613 E 2319946.199 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/9/88 2/9/88 16. ELEVATION TOP OF BORING -38.2' MLLW 6. THICKNESS OF OVERBURDEN 23.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 61.8 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.2 0': CLAYEY SILT (MH), dark gray to black, wet, USCS slightly calcareous. 0 -46.5 8.3 8.3': FAT CLAY (CH), greenish gray, moist, slightly 2 0 -47.3<sub>-</sub> 9.1 calcareous. 3 12 9.1': LEAN SILTY CLAY (CL), yellowish brown, moist, some sand, calcareous. 4 40 11.6': Trace shell fragments. 5 42 6 28 7 21 8 26 20 9 19.1': Trace sand. 10 17 11 17 12 22 -61.8 = 23.6 BOTTOM OF BOREHOLE AT -61.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation PT-6-88ALT** INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT Failing 314 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-6-88ALT N 390230.1737 E 2320046.175 James Arthur 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 1-3/8" Splitspoon w/ 5 1/2" Fishtail 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/9/88 2/9/88 INCLINED 16. ELEVATION TOP OF BORING -34.9' MLLW 6. THICKNESS OF OVERBURDEN 28.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.6 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.9 0': CLAYEY SILT (MH), dark gray to black, wet, USCS slightly calcareous. 0 1 -46.0<u>丰</u>11.1 11.1': FAT CLAY (CH), greenish gray, moist, slightly calcareous. 6 2 3 10 -52.4 = 17.5 17.1': Some sand, and shell fragments. 17.5': LEAN SILTY CLAY (CL), yellowish brown, 4 20 moist, some sand, and gravel. 19': Medium to stiff. Pull #1 From 53.9' to 57.5' Run 3.6' Rec 3.6' Box 100 Drilling Time: 5 Min Hyd Pressure: 50 PSI 22.6': Core badly ground from 57.5' to 59.6' due to Pull #2 coarse gravel fall in.. From 57.5' to 61.0' Box Run 3.5' Rec 3.5' 100 Drilling Time: 5 Min Hyd Pressure: 50 PSI Pull #3 From 61.0' to 63.6' Box 100 Run 2.6' Rec 2.6' Drilling Time: 2 Min. -63.6<del>=</del> 28.7 Hyd Pressure: 50 PSI BOTTOM OF BOREHOLE AT -63.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-7-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL PT-7-88 N 389415.0824 E 2319345.333 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 14 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/8/88 2/8/88 16. ELEVATION TOP OF BORING -37.1' MLLW 6. THICKNESS OF OVERBURDEN 25.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 62.5 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.1 0': CLAYEY SILT (MH), dark gray to black, wet, USCS slightly calcareous. 0 1 -42.6 5.5 5.5': LEAN SILTY CLAY (CL), yellowish brown, moist, some sand, trace shell fragments, calcareous. 2 25 3 38 4 24 5 44 6 24 7 28 30 8 9 21 10 20 11 25 12 22 13 19 14 22 -62.5 = 25.4 BOTTOM OF BOREHOLE AT -62.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** PT-9-88U INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 389269.0633 E 2319204.362 PT-9-88U Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/10/88 2/10/88 16. ELEVATION TOP OF BORING -37.8' MLLW 6. THICKNESS OF OVERBURDEN 25' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 62.8 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.8 0': CLAYEY SILT (MH), dark gray to black, wet, USCS slightly calcareous. 0 1 <u>-46.0</u> 8.2 8.2': LEAN SILTY CLAY (CL), yellowish brown, moist, some sand, calcareous. 2 26 10.2': Medium to stiff. From 48.0' to 52.8' Run 4.8' Rec 4.8' Drilling Time: 5 Min. Box Hyd Pressure: 50 PSI 100 1 of 2 Pull #2 From 52.8' to 58.1' Run 5.3' Rec 5.0' C.L. 0.3' (Overdrill) Drilling Time: 5 Min. 94 Hyd Pressure: 50 PSI Pull #3 From 58.1' to 62.8' Run 4.7' Rec 4.7' Drilling Time: 4 Min. Box Hyd Pressure: 50 PSI 100 2 of <u>-62.8  $\pm$  25.0</u> BOTTOM OF BOREHOLE AT -62.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SC-S-1-99

				Borning Designation 3	<u> </u>	<del>-99</del>				
DRILLING LOG  DIVISION South Atlantic Division	INSTAL				SHEET	1				
South Atlantic Division				larbor	of 1		EETS			
1. PROJECT	9. COORDINATE SYSTEM : VERTICAL									
Charleston Harbor Entrance Channel Deepening	Stat	State Plane - South Carolina NAD83 MLLW								
	1			OF BIT N/A						
2. HOLE NUMBER LOCATION COORDINATES				ER'S DESIGNATION OF DRILL						
SC-S-1-99 N 364152.422 E 2326620.672				eneric						
3. DRILLING AGENCY	12. TOT	AL SA		•	UNDISTU		)			
General Engineering			0	0		0				
4. NAME OF DRILLER	13. TOT	AL NU	JMBE	R CORE BOXES 0						
T. Pickett	14. ELE	VATIC	N GR	ROUND WATER NA						
5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL					MPLETED	)				
INCLINED	15. DAT	E BOI	RING	1/8/99	1/8/					
6. THICKNESS OF OVERBURDEN 3.5'	16. ELE	VATIC	N TO	P OF BORING -37.8' MLLW						
	17 TOT	AL CC	)RF R							
7. DEPTH DRILLED INTO ROCK 4'		17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR								
8. TOTAL DEPTH OF BORING 45.3'		Trap Puckette								
			T			,	ē			
ELEV DEPTH OF FIELD CLASSIFICATION OF MATERIALS	% REC	Samp No.	۾ ا	REMARKS		Blows/ 0.5 ft	N-Value			
United States   United Stat	REC	San	RgD %		ī	ğ o	ź			
-37.8 <b>0':</b> SILTY CLAY (OH), black, saturated, soft, "puff										
mud".										
<b>1 ‡ ///</b>										
-41.3 \( \frac{1}{2} \) 3.5										
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BOTTOM OF BOREHOLE AT -45.3 ft

								Boring D	esignatior	1 5	C-S-	2-99	
DDII LING I	00	DIVISION		INST	ALL	ATIO	N				SHEE	Γ ′	1
DRILLING L	-OG	South Atlantic Divi	sion	Cł	nar	lesto	on H	arbor			OF '		EETS
1. PROJECT								YSTEM		:	VERTI		
Charleston Har	bor En	trance Channel Deepe	ening					South Carol	ina NAD83	:	N	ILLW	
								OF BIT N/A					
2. HOLE NUMBER		OCATION COORDINATES						R'S DESIGNAT	ION OF DRILL				
SC-S-2-99		N 364093.905 E 232	6237.3					neric					
3. DRILLING AGENCY				12. T	OTA	AL SA	MPLE 0	S	DISTURBED 0	: 1	JNDIST	URBEI 0	)
General Engine  4. NAME OF DRILLER				40 T	OT 4			2 0005 00750		<u>:</u>		U	
T. Pickett					_			R CORE BOXES					
5. DIRECTION OF BOI	RING	: DEG FROM :	BEARING	14. E	LEV	'ATIO	N GR	OUND WATER	NA				
		VERTICAL		15. D	ATF	BOF	RING	STAR		CON	MPLETE		
INCLINED									1/8/99		1/8	/99	
6. THICKNESS OF OV	ERBURD	EN 4'		16. E	LEV	'ATIO	N TO	P OF BORING	-37.8' M				
7. DEPTH DRILLED IN	TO ROC	< 3.5'						ECOVERY FOR		4			
				18. S				ID TITLE OF INS	PECTOR				
8. TOTAL DEPTH OF E	BORING	45.3'			_	<u> </u>	Puc	kette					
ELEV DEPTH 9		FIELD CLASSIFICATION O	F MATERIALS	,	% EC	Samp No.			REMARKS			Blows/ 0.5 ft	N-Value
		(Description)		R	EC	ami	RQD %		KEWIAKKS			B 5.0	>
-37.8	0': SIL	TY CLAY (OH), tan, wet, "	puff mud".			0,							
	0.25': E	Black, saturated.											
± //													
-41.8 + 4.0	1												
-41.6 4.0													
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+													
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BOTTOM OF BOREHOLE AT -45.3 ft

Boring Designation SC-S-3-99

									Doning D	esignation	<u> </u>	<u> </u>	<u> </u>	
DRILLING	<u> </u>	06	DIVISION		INS.	TALL	ATIO	N				SHEE	Γ ′	1
DRILLING	, L	UG	South Atlantic Div	rision	С	har	lesto	on H	arbor			OF 1		EETS
1. PROJECT									YSTEM			VERTI		
Charleston H	larb	or Entr	ance Channel Deep	ening	S	tate	Pla	ne -	South Carol	ina NAD83		MLLW		
					10. 3	SIZE	AND	TYPE	OF BIT N/A					
2. HOLE NUMBER			CATION COORDINATES						ER'S DESIGNATI	ON OF DRILL				
SC-S-3-99		<u> </u>	N 364095.762 E 23						neric					
3. DRILLING AGEN					12.	TOTA	AL SA		is :	DISTURBED	١	JNDIST		)
General Engi		ering						0	:	0	:		0	
4. NAME OF DRILLE	ER				13.	TOTA	AL NU	IMBE	R CORE BOXES	0				
T. Pickett  5. DIRECTION OF BORING DEG FROM BEARING					14.	ELEV	/ATIO	N GR	OUND WATER	NA				
✓ VERTICAL : VERTICAL :					D 4 T F			STAR	ΓED	COI	MPLETE	D		
				<u>:</u>	15. 1	DATE	BOF	KING	:	1/8/99		1/8/99		
6. THICKNESS OF (	OVE	RBURDE	:N 3.5'	•	16.	ELEV	/ATIO	N TO	P OF BORING	-37.8' M	LĹW			
7 DEDTU DDU LED	\ I	.O DOOK			17.	TOTA	AL CC	RER	ECOVERY FOR	BORING N/	4			
7. DEPTH DRILLED	IINI	O ROCK	·		18.	SIGN	ATUF	RE AN	ID TITLE OF INS	PECTOR				
8. TOTAL DEPTH O	)FB	ORING	45.3'			T		Puc	kette					
ELEV DEPTH	GEND		FIELD CLASSIFICATION (	OF MATERIALS		%	Samp No.			DEMARKS			Blows/ 0.5 ft	N-Value
ELEV   DEPTH   5	EG		(Description	)		% REC	Samp	RQD %		REMARKS			Bo 5.0	> Z
-37.8			Y CLAY (OH), tan, wet,	"puff mud".										
		<b>0.25'</b> : B	ack, saturated, soft.											
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	1													
	9													
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	1													
-41.3 ‡ 3.5														
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BOTTOM OF BOREHOLE AT -45.3 ft

**Boring Designation** SD-98-1 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 3 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SD-98-1 N 365631.83 E 2327039.57 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/4/98 8/4/98 -8.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 71.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 80' James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -8.5 0': SILTY SAND (SM), fine; dark gray, trace shell USCS fragments, calcareous. Began 5' Centers at 38.4' 1 0 3.6': Gray. 2 8 3 4 4 5 -16.6 8.1 8.1': CLAYEY SAND (SC), fine; olive gray, calcareous. 5 0 -20.2 = 11.7 11.7': FAT CLAY (CH), dark gray, trace sand, 6 0 7 0 20.8': Gray, trace sand, and shell fragments, slightly calcareous. 8 0

**Boring Designation** SD-98-1 INSTALLATION **DRILLING LOG (Cont Sheet)** Charleston Harbor 3 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365631.83 E 2327039.57 -8.5' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** RQD % (Description) 11.7': FAT CLAY (CH), dark gray, trace sand, calcareous. (continued) 26.9': No sand or shell fragments. 0 9 -38.4 = 29.9 29.9': Wash. -40.4 = 31.9 31.9': FAT CLAY (CH), gray, slightly calcareous. 10 0 -43.4±34.9 34.9': Wash. -45.4 <del>=</del> 36.9 36.9': FAT CLAY (CH), gray, slightly calcareous. 11 0 -48<u>.0  $\pm$  39.5</u> 39.5': Wash.  $-50.4 \pm 41.9$ 41.9': FAT CLAY (CH), gray, slightly calcareous. 12 0 -53.1 <del>+</del> 44.6 44.6': Wash.  $-55.4 \pm 46.9$ 46.9': FAT CLAY (CH), gray, slightly calcareous. 13 0 -57.8 ± 49.3 49.3': Wash. <u>-60.4  $\pm$  51.9</u> 51.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 14 17  $-61.9 \pm 53.4$ 53.4': Wash.

**Boring Designation** SD-98-1 INSTALLATION SHEET 3 **DRILLING LOG (Cont Sheet)** Charleston Harbor 3 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane **MLLW** NAD83 LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365631.83 E 2327039.57 -8.5 N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV **DEPTH** Samp **REMARKS** RQD % (Description) 53.4': Wash. (continued) -65.4 56.9 56.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 15 11  $-66.9 \pm 58.4$ 58.4': Wash.  $-70.4 \pm 61.9$ 61.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 16 12 -71.9 + 63.4 63.4': Wash.  $-75.4 \pm 66.9$ 66.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 17 15 -76.9 + 68.468.4': Wash. <u>-78.5 <del>+</del> 70.0</u> 70': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 18 11  $-80.0 \pm 71.5$ BOTTOM OF BOREHOLE AT -80.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SD-98-2 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 3 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SD-98-2 N 365639.24 E 2327265.03 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 11 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/5/98 8/5/98 16. ELEVATION TOP OF BORING -15.5' MLLW 6. THICKNESS OF OVERBURDEN 63.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 78.8 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -15.5 0': LEAN SILT (ML), dark gray. USCS 1 0 -28.3 \pm 12.8 12.3': Some sand. 12.8': FAT SILT (MH), dark gray to black. 2 0 -33.8<del>+</del> 18.3 18.3': FAT CLAY (CH), gray. 3 0 4 0

**Boring Designation** SD-98-2 INSTALLATION **DRILLING LOG (Cont Sheet)** Charleston Harbor 3 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365639.24 E 2327265.03 -15.5' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** gg% (Description) 18.3': FAT CLAY (CH), gray. (continued) 30.1': Trace sand, and silt, slightly calcareous. 5 0 35.4': Trace organics. 6 0 41.3': Trace shell fragments. 7 0 -59.3<sup>±</sup> 43.8 43.8': Wash. -61.8 + 46.3 46.3': CLAYEY SAND (SC), fine; light olive gray, 8 0 calcareous. -63.3 = 47.8 47.8': Wash. -66.8 = 51.3 51.3': CLAYEY SAND (SC), fine; light olive gray, with chert, calcareous. 9 12  $-68.3 \pm 52.8$ 52.8': Wash. -71.8 = 56.3 56.3': 10 14 -73.3 <del>+</del> 57.8 57.8': -77.3  $\pm$  61.8

**Boring Designation** SD-98-2

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חחו	LINIC	10	C (Cant Chast)	INS	STALL	.ATIO	N			SHEE	- ;	3
DRILLING LOG (Cont Sheet)				(	Char	lest	on H	arbor		OF 3	B SH	IEETS
PROJECT					ORDI	NATE	SYS	TEM : HORIZONT	AL :	VERTICAL		
Charleston Harbor Entrance Channel Deepening					State Plane NAD83					MLLW		
LOCATION COORDINATES			ELEVATION TOP OF BORING									
N 365639.24 E 2327265.03				_	15.5	;'						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS			Blows/ 0.5 ft	N-Value
-78.8	63.3		<b>61.8':</b> CLAYEY SAND, fine; light olive gray, calcareous. <i>(continued)</i>			11						24

BOTTOM OF BOREHOLE AT -78.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SD-98-3 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SD-98-3 N 365652.45 E 2327491.06 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/8/98 8/8/98 16. ELEVATION TOP OF BORING -21.1' MLLW 6. THICKNESS OF OVERBURDEN 59.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 80.3 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -21.1<del>\_</del> 0': FAT SILT (MH), dark gray, trace sand, and shell USCS fragments. 0 -31.6 = 10.5 10.5': FAT CLAY (CH), gray, trace sand, and shell fragments. 0 2 15.5': Trace silt, slightly calcareous. 3 0 -40.2<sup>±</sup>19.1 19.1': CLAYEY SAND (SC), fine; gray, slightly calcareous. 4 0 0 5 *-*47.9 <sup>∓</sup> 26.8 26.8': Wash. -48.8 27.7 27.7': FAT CLAY, gray, some sand, and silt, slightly calcareous. 0 6  $-51.6 \pm 30.5$ 30.5': Wash

**Boring Designation** SD-98-3 INSTALLATION **DRILLING LOG (Cont Sheet) Charleston Harbor** 2 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365652.45 E 2327491.06 -21.1' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** RQD % (Description) 30.5': Wash. (continued) -53.8 <del>=</del> 32.7 32.7': CLAYEY SAND (SC), fine; gray, some silt. 7 0 -57.1 = 36.0 **36':** Wash. -58.8 37.7 37.7': CLAYEY SAND (SC), fine; olive gray, 8 16 calcareous. <u>-60.3</u> <u>+39.2</u> 39.2': Wash.  $-63.8 \pm 42.7$ 42.7': CLAYEY SAND (SC), fine; olive gray, 9 21  $-65.3 \pm 44.2$ 44.2': Wash. -68.8 🛨 47.7 47.7': CLAYEY SAND (SC), fine; olive gray, 10 8 calcareous.  $-70.3 \pm 49.2$ 49.2': Wash.  $-73.8 \pm 52.7$ 52.7': LEAN CLAY (CL), olive gray, some sand, 11 15 calcareous. -75.3<del>=</del>54.2 54.2': Wash. *-*78.8 <u>∓</u> 57.7 57.7': CLAYEY SAND (SC), fine; olive gray, 12 19 calcareous. <u>-80.3</u> <u>+59.2</u> BOTTOM OF BOREHOLE AT -80.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-100-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-100-88 N 363608.422 E 2328053.209 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/25/88 8/25/88 16. ELEVATION TOP OF BORING -39.9' MLLW 6. THICKNESS OF OVERBURDEN 5.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45.7 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.9 0': FAT CLAY (CH), high plasticity; greenish brown, USCS high plasticity, calcareous. 1 0 24 2.8': With a slight odor.

2

BOTTOM OF BOREHOLE AT -45.7 ft

4.3': Trace shell fragments.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-45.7 🕇

5.8

24

37

**Boring Designation** SYR-101-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER SYR-101-88 N 364044.4281 E 2328144.136 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -38.7' MLLW 6. THICKNESS OF OVERBURDEN 6.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45.5 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.7 0': FAT CLAY (CH), high plasticity; greenish brown, USCS high plasticity, trace gravel, and clay, calcareous. 1 0 12 16 18 2 21 -45.5 BOTTOM OF BOREHOLE AT -45.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-102-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-102-88 N 364504.426 E 2328194.059 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -37.3' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46.3 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS ROD % REC (Description) -37.3 0': SAND (SP), fine to medium; grayish tan, Poorly USCS Graded, wet, trace silt. 0 1 8 -40.3 3.0 3': SILTY SAND (SM), fine to medium; gray, wet, trace shell fragments. 2 3 -41.8 4.5 4.5': SAND (SP), fine to medium; grayish tan, Poorly Graded, wet, trace silt. 3 6 -43.3 6.0 6': SILTY SAND (SM), fine to medium; tannish gray, wet, some shell fragments. 4 18 7.5': Trace clay. 5 6 -46.3 9.0 BOTTOM OF BOREHOLE AT -46.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SYR-103-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-103-88 N 363944.2802 E 2327307.17 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -39' MLLW 6. THICKNESS OF OVERBURDEN 13.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.7 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39 0': FAT CLAY (CH), dark gray, wet. USCS 1 0 2 0 13.2': FAT SILTY CLAY, light greenish brown, 3 5 <u>-52.7‡13.7</u> moist, trace sand. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -52.7 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SYR-104-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SYR-104-88 N 364381.1282 E 2326517.116 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -37.5' MLLW 6. THICKNESS OF OVERBURDEN 14.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.6 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.5\_ 0': FAT CLAY (CH), dark gray, wet. USCS 1 0 2 13.1': FAT SILTY CLAY, light greenish brown, moist, trace sand. 3 10 -51.6 BOTTOM OF BOREHOLE AT -51.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-105-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-105-88 N 364416.0117 E 2325870.124 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 -32.7' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 13.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 46.5' 8. TOTAL DEPTH OF BORING James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.7\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -44.3 <u>+</u> 11.6 11.6': FAT CLAY (CH), dark gray, wet. 2 n -45.4 12.7 12.7': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, calcareous. 3 0 -46.5 <del>+</del> 13.8 BOTTOM OF BOREHOLE AT -46.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** SYR-106-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SYR-106-88 N 364078.9258 E 2325343.19 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 16. ELEVATION TOP OF BORING -36.5' MLLW 6. THICKNESS OF OVERBURDEN 8.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 44.8 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.5 USCS 0': CLAYEY SILT (MH), dark gray to black, wet. 1 0 -39.3 2.8 2.8': FAT CLAY (CH), dark gray, wet. 2 0 -40.3 3.8 3.8': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, calcareous. 3 0 25 4 5 41 <u>-44.8</u> + 8.3 BOTTOM OF BOREHOLE AT -44.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-107-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 364832.8953 E 2325274.069 SYR-107-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 16. ELEVATION TOP OF BORING -35' MLLW 6. THICKNESS OF OVERBURDEN 15.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35 0': CLAYEY SILT (MH), dark gray to brown, wet. USCS 0 1 -48.5 13.5 13.5': FAT CLAY (CH), dark gray, wet. 2 0 -49.7 <del>+</del> 14.7 14.7': LEAN SILTY CLAY (CL), light greenish 3 0 brown, moist, some sand, calcareous.  $-50.6 \pm 15.6$ BOTTOM OF BOREHOLE AT -50.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-108-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 367407.5291 E 2323576.693 SYR-108-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/2/89 6/2/89 -32.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 22' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.5-0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 -42.5 = 10.0 1 0 10': LEAN SILT (ML), olive green, moist, calcareous. 2 20 0 17 3 22 16': M, with sand. 11 15 16 4 18  $-54.5 \pm 22.0$ BOTTOM OF BOREHOLE AT -54.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-109-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-109-89 N 367067.5265 E 2323512.749 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/2/89 6/2/89 16. ELEVATION TOP OF BORING -35.1' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.1-0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 1 <u>-42.6</u> ± 7.5 7.5': LEAN SILT (ML), olive green, moist, 2 22 calcareous. 19 14 3 8 12.5': With shell fragments. 14 10 4 13 9 13 5 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-110-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-110-89 N 365964.7443 E 2324582.902 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/89 6/3/89 16. ELEVATION TOP OF BORING 37.2' MLLW 6. THICKNESS OF OVERBURDEN 17.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING -19.3 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.2 0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 1 0 32.3 4.9 4.9': LEAN SILT (ML), olive green, moist, 2 24 calcareous. 18 14 3 16 16 15 4 20 20 19 5 <u> 19.3 ‡</u> 17.9 BOTTOM OF BOREHOLE AT 19.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-111-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 366775.5644 E 2323684.792 SYR-111-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/89 6/3/89 16. ELEVATION TOP OF BORING -38.7' MLLW 6. THICKNESS OF OVERBURDEN 16 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.7\_ 0': FAT CLAY (CH), soft; dark gray, wet. USCS NOTE: Sample 1 taken from outside of 1 0 <u>-51.7  $\pm$  13.0</u> 13': LEAN SILT (ML), olive green, moist, calcareous. 2 12 3 12 <u>-54.7  $\pm$  16.0</u> BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SYR-112-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-112-89 N 364537.9458 E 2325517.112 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/89 6/3/89 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': FAT CLAY (CH), soft; dark gray, wet. USCS NOTE: Sample 1 taken from outside of rod and casing. 1 0 -51.3 9.4 9.4': LEAN SILT (ML), olive green, moist, calcareous. 20 2 3 14 17 -55.8 ‡ 13.9 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-113-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 **MLLW** Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 364468.345 E 2327738.075 SYR-113-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 13 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/21/90 2/21/90 -31.2' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV DEPTH Samp REMARKS RQD % REC (Description) -31.2-0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 -38.1 ‡ 6.9 6.5': Some sand. 6.9': LEAN CLAY (CL), olive green, moist, trace 2 2 sand, calcareous. 7 3 4 15 16 5 6 22 7 13 8 19 16.5': Trace sand. 9 19 10 18 19.5': Some sand. 11 12 12 12 13 14

**Boring Designation** SYR-113-90

	Doning D	esignation	SIK-III	3-90						
DDILLING LOC (Cont Choot)	INSTALLATION	SHEET	2							
DRILLING LOG (Cont Sheet)	Charleston Harbor	Charleston Harbor								
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL							
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLI	LW						
LOCATION COORDINATES	ELEVATION TOP OF BORING	•	•							
N 364468.345 E 2327738.075	-31.2'									
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Wamp Namb Namb Namb Namb Namb Namb Namb Namb	REMARKS	Blows/	0.5 ft N-Value						

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SYR-114-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 364371.2535 E 2327215.102 SYR-114-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/22/90 2/22/90 16. ELEVATION TOP OF BORING -35.5' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.5-0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace sand. 1 0 -38.5 干 3.0 3': LEAN CLAY (CL), olive green, wet, some sand, calcareous. 2 1 4.5': Moist, some sand. 3 10 4 16 5 23 6 15 10.5': Trace sand. 7 22 8 18 17 9 10 15 11 14 18': Some sand. 12 15 -55.0  $\pm$  19.5 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-115-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-115-90 N 364543.0281 E 2325979.101 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 0 14 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 2/22/90 2/22/90 INCLINED 16. ELEVATION TOP OF BORING -4.5' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 28.5 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS **DEPTH** Samp **REMARKS ELEV** RQD % REC (Description) -4.5 0': SILTY SAND (SM), fine to medium; dark gray to USCS black, wet, trace clay, and shell fragments, slightly calcareous. NOTE: Boring terminated at 28.5' due to 0 severe weather warning. See 5 companion log SYR-115A-90 for continuation of boring. -7.5 **‡** 3.0 3': CLAYEY SAND (SC), fine to medium; dark gray, wet, trace shell fragments, slightly calcareous. 2 n <u>-11</u>.5‡ 7.0 7': FAT CLAY (CH), dark gray, moist, slightly 3 3 calcareous. 0 4 5 4 0 6 7 4 13.5': Trace sand, and shell fragments. 8 4 -19.5 + 15.0 15': CLAYEY SAND (SC), medium to coarse; dark gray to gray, wet, with shells, and shell fragments, 9 3 calcareous. -21.0 = 16.5 16.5': SILTY SAND (SM), fine to coarse; gray and 10 20 tannish gray, moist, trace shell fragments, and clay, -22.5 18.0 18': CLAYEY SAND (SC), fine to medium; tannish gray, wet, with shells, and shell fragments, 11 17 calcareous.  $-24.0 \pm 19.5$ 19.5': SILTY SAND (SM), fine to medium; grayish green, moist, trace shell fragments, and clay, 12 13 calcareous.  $-25.5 \mp 21.0$ 21': SILTY GRAVEL (GM), fine to coarse; grayish green, wet, some sand, and shell fragments, 13 9 -27.0  $\pm$ calcareous. 22.5 22.5': CLAYEY SAND (SC), fine; olive green, moist, 14 8 <u>-28.5 <del>+</del> 24.0</u> BOTTOM OF BOREHOLE AT -28.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-115A-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-115A-90 N 364549.0308 E 2325995.1 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 2/28/90 2/28/90 16. ELEVATION TOP OF BORING -4.4' MLLW 6. THICKNESS OF OVERBURDEN 51.1' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 55.5' 8. TOTAL DEPTH OF BORING James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -4.4 0': Fishtailed NOTE: See companion log SYR-115-90. Fishtailed from 4.4' to 28.5'. -28.5 24.1 24.1': SANDY ELASTIC SILT CLAYEY SAND (SC), fine; olive green, moist. 1 15 25.6': Moist, trace shell fragments, and gravel. 18

**Boring Designation** SYR-115A-90

DDU LING LOC (Cont Shoot)	INSTAL	_ATIO	N	<u> </u>	SHEET	2
DRILLING LOG (Cont Sheet)			on H	OF 2 SHEETS		
PROJECT	COORD	INATE	E SYS	VERTICAL		
Charleston Harbor Entrance Channel Deepening	Stat	e Pla	MLLW			
LOCATION COORDINATES	ELEVAT	T NOI	OP O	F BORING		
N 364549.0308 E 2325995.1	-4.4					
ELEV DEPTH OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
24.1': SANDY ELASTIC SILT CLAYEY SAND (SC fine; olive green, moist. (continued)	),	3				17
		4				9
		5				14
28.6°: LEAN CLAY (CL), olive green, moist, some sand, calcareous.		6				11
		7				14
		8				18
		9				27
		10				22
		11				18
		12				20
		13				20
		14				16
		15				13
		16				17
		17				17
49.6': Trace sand.  -55.5 - 51.1  BOTTOM OF BORFHOLE AT -55.5 ft		18				15
BOTTOM OF BOREHOLE AT -55.5 ft				BLOWS PER FOOT: Number red	quired	

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SYR-116-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-116-90 N 364746.9625 E 2325639.075 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 32 32 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/1/90 3/1/90 16. ELEVATION TOP OF BORING 1.5' MLLW 6. THICKNESS OF OVERBURDEN 57 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 1.5 0': SILTY SAND (SM), fine to medium; dark gray, USCS 4 1 wet, with shells, and shell fragments, slightly NOTE: Top of hole located in tidal zone. calcareous. 2 12 -1.5 3.0 3': FAT CLAY (CH), gray, moist, calcareous. 3 0 7.5': Trace shell fragments. 4 0 10.5': No shell fragments, non-calcareous. 5 0 3 13.5': Trace organics. 6 0 3 7 0 4 8 0 -20.5 = 22.0 22': LEAN CLAY (CL), olive green, some sand, 9 6 calcareous. 10 5  $-23.5 \pm 25.0$ 11 7 25': CLAYEY SAND (SC), fine; olive green, wet, calcareous. 12 5 13 6 14 8

Boring Designation SYR-116-90

								Boring Designation	5YR-116	
DRIL	LING	LO	G (Cont Sheet)		STALL			larbor	SHEET	2
PROJECT			ORDI			OF 2 SHEETS				
		Harl	bor Entrance Channel Deepening							
	ON COO				State			E NAD83	: MLL\	N
LOCATI	ION COO	KUIN	ATES	ELE	EVAII	ON I	OP O	OF BURING		
N 36	4746.9	_	E 2325639.075	_1	1.5'					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value
			25': CLAYEY SAND (SC), fine; olive green, wet, calcareous. (continued)			15				5
-31.5	33.0		31.5': Trace shell fragments.			16				8
	34.5		33': LEAN CLAY (CL), olive green, moist, trace sand, calcareous.			17				9
			<b>34.5':</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.	,		18				13
-36.0	37.5					19				12
-37.5	39.0		<b>37.5':</b> LEAN CLAY (CL), olive green, moist, some sand, calcareous.			20				9
=			<b>39':</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.			21				17
						22				15
=======================================						23				14
-43.5	45.0					24				15
			<b>45":</b> LEAN CLAY (CL), olive green, moist, some sand, calcareous.			25				17
1						26				20
						27				18
						28				13
=======================================						29				11
-52.5	54.0					30				12
-			<b>54*:</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.			31				12
-55.5	57.0					32				13
			BOTTOM OF BOREHOLE AT -55.5 ft					BLOWS PER FOOT: Number	required	

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SYR-117-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 365032.9385 E 2325544.031 SYR-117-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 34 34 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 3/2/90 3/2/90 16. ELEVATION TOP OF BORING 1.3' MLLW 6. THICKNESS OF OVERBURDEN 57 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) 1.3 0': FAT CLAY (CH), dark gray, wet, trace sand, and USCS shell fragments. 1': No sand. 1 0 1 0 2 9': Dark brownish gray. 3 0 3 -10.7 = 12.0 11.7': Some sand, and shell fragments. 4 7 12': CLAYEY SAND (SC), medium to coarse; dark *-*11.7 <del>±</del> 13.0 gray, wet, with shell fragments. 5 13': FAT CLAY (CH), bluish green, moist, trace 6 10 shell fragments. 15': Grayish green, trace sand, and shell fragments. 7 6  $-15.2 \pm 16.5$ 16.5': LEAN CLAY (CL), olive green, moist, some 8 2 sand, trace shell fragments, calcareous. 18': No sand or shell fragments. 9 8 10 5 11 4 -21.2 22.5 22.5': CLAYEY SAND (SC), fine; olive green, moist, 12 5 calcareous. 13 6 5 14 27': Trace organics. 7 15 28.5': Trace shell fragments. 12 16 28.7 <u>‡ 30.0</u>

Boring Designation SYR-117-90 SHEET 2

		LINIOTALI	4.710		Boring Designation	SYR-117-	
DRILLING LO	G (Cont Sheet)	INSTALI			arbor	SHEET OF 2 SH	2
PROJECT		COORD					
Charleston Harbor Entrance Channel Deepening		State			NAD83	MLLW	
LOCATION COORDINA	ATES				F BORING		
N 365032 9385	E 2325544.031	1.3'					
		1.5	<u>o</u>				<u>e</u>
ELEV DEPTH 8	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	<b>30':</b> LEAN CLAY (CL), olive green, moist, trace sand, calcareous.		17				7
	<b>31.5':</b> Some sand.		18				12
	33': Trace sand.		19				17
			20				12
	36': Some sand.		21				9
			22				13
			23				18
			24				18
	42': Trace sand.		25				18
			26				21
			27				16
			28				11
			29				17
	<b>49.5':</b> Some sand.		30				13
			31				11
-52.7 54.0			32				11
	<b>54':</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.		33				14
-55.7 = 57.0			34				14
	BOTTOM OF BOREHOLE AT -55.7 ft				BLOWS PER FOOT: Number re	quired	
	NOTE: Soils visually field classified in accordance with the Unified Soil Classification System				to drive 1-3/8"ID splitspoon w/14 hammer falling 30".	IU ID.	

**Boring Designation** SYR-118-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-118-90 N 365592.8408 E 2325072.951 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 21 21 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/3/90 3/3/90 16. ELEVATION TOP OF BORING -17.3' MLLW 6. THICKNESS OF OVERBURDEN 37.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -17.3 0': FAT CLAY (CH), dark gray, wet, slightly USCS calcareous. 0 1 0 2 -26.3 9.0 9': CLAYEY SAND (SC), fine; olive green, moist, calcareous. 3 5 4 6 12': Trace shell fragments. 5 10 13.5': Trace shell fragments. 6 7 -32.3 + 15.015': LEAN CLAY (CL), olive green, moist, some sand, calcareous. 7 11 8 11 9 11

Boring Designation SYR-118-90

		T			Boring Designation	SYR-118	
DRILLING LOG (C	Cont Sheet)	INSTALL			arbor	SHEET	2
PROJECT			NATE	OF 2 SHEETS			
Charleston Harbor Entrance Channel Deepening					<u> </u>		
		State			NAD83	MLL\	N
LOCATION COORDINATES		ELEVAT	ION T	OP O	F BORING		
N 365592.8408 E 2	2325072.951	-17.3					
ELEV DEPTH US	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value
15': l sand	LEAN CLAY (CL), olive green, moist, some l, calcareous. (continued)		10				15
			11				12
± ± ±			12				22
<u> </u>			13				16
25.5	': Moist, trace sand.		14				19
# # #			15				18
<u> </u>			16				20
30':	Trace sand.		17				13
			18				12
‡ ‡			19				15
			20				15
-54.8 = 37.5			21				15
BOT NOT	TOM OF BOREHOLE AT -54.8 ft  E: Soils visually field classified in accordance the Unified Soil Classification System			ı	BLOWS PER FOOT: Number r to drive 1-3/8"ID splitspoon w/1 hammer falling 30".	equired 40 lb.	

**Boring Designation** SYR-119-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-119-90 N 366454.7235 E 2324534.824 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 16 1 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 3/4/90 3/4/90 16. ELEVATION TOP OF BORING -10.4' MLLW 6. THICKNESS OF OVERBURDEN 45' 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH Samp N ELEV REMARKS RQD % (Description) -10.4 USCS 0': FAT CLAY (CH), gray, moist, trace shell fragments. 0 1 2 2 0 9': Trace sand, no shell fragments. 3 0 0 4

**Boring Designation** 

DRILLING LOG (Cont Sheet)			STALI Chai			SHEET 2 OF 2 SHEETS					
PROJECT			Charleston Harbor COORDINATE SYSTEM : HORIZONTAL						VERTICAL		
Cha	Charleston Harbor Entrance Channel Deepening		State Plane			ane	NAD83		MLLW	,	
LOCAT	ION COO	RDIN	ATES	EL	EVAT	ION T	ГОР О	OF BORING	•		
N 36	66454.7		5 E 2324534.824		-10.4						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	27.0		<b>0':</b> FAT CLAY (CH), gray, moist, trace shell fragments. <i>(continued)</i>			5					0
-38.2 - - -	27.8		27.8': LEAN CLAY (CL), olive green, moist, some sand, calcareous.			6					7
						8					1
			31.5': Trace sand, and shell fragments.			9					1
-						10					2
=======================================			34.5': No shell fragments.			11					1
			27.5h.Tuana ann d			12					1
			37.5': Trace sand.  39': Some sand.			13					1
-			40.5': Trace gravel.			14					1
	<del> </del>		42': No gravel.			15	-				1
-			g. a. v.			16					1
-55.4	45.0		BOTTOM OF BOREHOLE AT -55.4 ft			17		BLOWS PER FOOT: Number	required		1
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System					to drive 1-3/8"ID splitspoon was hammer falling 30".	/140 lb.		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** TCU-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCU-1-88 N 358933.7753 E 2329431.953 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/1/88 10/1/88 16. ELEVATION TOP OF BORING -46.6' MLLW 6. THICKNESS OF OVERBURDEN 22.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 69.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.6-0': FAT CLAY (CH), dark gray, wet, with shell USCS fragments. 1 17 -48.1 1.5 1.5': No recovery. 12 -49.6 3.0 3': SILTY SAND (SM), fine; greenish gray, with shell fragments, and gravel, slightly calcareous. 2 17 -51.1 4.5 4.5': (CL), Fishtailed from 51.1' to 68.0'.  $-68.0 \pm 21.4$ 21.4': LEAN SILTY CLAY (CL), olive green, with shell fragments, calcareous. 3 37 -69.5<sup>±</sup> 22.9 BOTTOM OF BOREHOLE AT -69.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCU-5-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCU-5-89 N 359728.3308 E 2328891.431 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/13/89 4/13/89 16. ELEVATION TOP OF BORING -36.1' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.1-0': FAT CLAY (CH), dark gray to black, slightly USCS calcareous. 0 9.4': Greenish gray. 2 6 10.5': Trace shell fragments. 3 5 13.5': Trace sand, no shell fragments. 0 4 5 <u>-55.6</u> 19.5 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** VC-5-A-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 5" Shelby Tube w/ 6" fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 389385.0791 E 2319320.338 VC-5-A-88 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 2 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/22/88 3/22/88 16. ELEVATION TOP OF BORING -35' MLLW 6. THICKNESS OF OVERBURDEN 14.2 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.2 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35 0': FAT CLAY (CH), black, trace sand. NOTE: Boring was discontinued after Tube 3 was left in hole (the screws ripped out of the tube). -43.7<sup>±</sup> 8.7 8.7': SANDY LEAN CLAY (CL), olive green, with shell fragments, calcareous. Tube Tube 2 -47.2 + 12.2 12.2': No recovery. -49.2 BOTTOM OF BOREHOLE AT -49.2 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** VC-5-B-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 4 x 5 1/2" core bbl w/ dia 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL VC-5-B-88 N 389393.0741 E 2319293.338 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/22/88 3/22/88 16. ELEVATION TOP OF BORING -36.6' MLLW 6. THICKNESS OF OVERBURDEN 29.6 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 66.2 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -36.6 0': FAT CLAY (CH), black, some sand. -43.7 7.1 Pull #1 7.1': SANDY LEAN CLAY (CL), olive green, with From 43.7' To 48.7' shell fragments, calcareous, glauconitic. Run 5.0' Rec 4.9' C.L. 0.1' C.D. 48.6' U.L. 0.0' Box 100 Pull #2 From 48.7' To 53.7' Run 5.0' Rec 4.9' C.L. 0.1' C.D. 53.7' U.L. 0.2' Box 96 2 Pull #3 From 53.7' To 58.7' Run 5.0' Rec 4.8' C.L. 0.2' C.D. 58.7' U.L. 0.2' Box 96 Pull #4 3 From 58.7' To 63.2' Run 4.5' Rec 3.4' C.L. 1.1' C.D. 62.1' U.L. 0.0' Pull #5 From 63.2' To 66.2' Run 3.0' Rec 4.1' Box C.G. 1.1' 100 -66.2<sup>±</sup>29.6 BOTTOM OF BOREHOLE AT -66.2 ft NOTE: Soils visually field classified in accordance

with the Unified Soil Classification System

**Boring Designation** WR-17-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 358914.5579 E 2333734.882 WR-17-88 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/17/88 2/17/88 16. ELEVATION TOP OF BORING -34.8' MLLW 6. THICKNESS OF OVERBURDEN 18.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.7 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.8 0': SANDY SILT (MH), dark gray. USCS 1 0 <u>-49.2 + 14.4</u> 14.4': SANDY FAT CLAY (CH), dark gray, with shell fragments. 2 0 -51.7 16.9 16.9': SANDY LEAN CLAY (CL), yellowish green. 3 12 4 5 30 -53.7  $\pm$  18.9 BOTTOM OF BOREHOLE AT -53.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-19-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-19-88 N 364926.3148 E 2338566.761 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 14 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/18/88 2/18/88 16. ELEVATION TOP OF BORING -23.9' MLLW 6. THICKNESS OF OVERBURDEN 31.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -23.9 0': SANDY SILT (MH), black. USCS 0 -36.8 🗮 12.9 12.9': FAT CLAY (CH), dark gray, with sand, and 2 0 shell fragments. 14.9': Lenses of calcareous sand. 3 6 4 4 5 -42.1<del>丰</del>18.2 6 14 18.2': SANDY LEAN CLAY (CL), gray, calcareous. -43.1 = 19.2 19.2': SANDY FAT CLAY (CH), gray, calcareous. 7 13 8 16 9 16 10 21 11 15 12 18 13 19 14 23 -55.1= BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30".

with the Unified Soil Classification System

**Boring Designation** WR-20-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-20-88 N 364793.3931 E 2338990.775 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/17/88 2/17/88 16. ELEVATION TOP OF BORING -34.5' MLLW 6. THICKNESS OF OVERBURDEN 16.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.8 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.5 0': SANDY SILT (MH), black. USCS 0 1 -40.3 5.8 5.8': SANDY FAT CLAY (CH), light green, calcareous. 2 22 3 15 4 18 5 19 6 15 7 17 8 15 -50.8 16.3 BOTTOM OF BOREHOLE AT -50.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-21-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 366433.6456 E 2340565.455 WR-21-90 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 13 13 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/15/90 6/15/90 -28.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 27.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -28.5 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 *-*37.7∓ 9.2 9.2': LEAN CLAY (CL), olive green, moist, some 2 12 sand, calcareous. 3 12 4 11 5 11 6 15 7 12 8 12 9 14 10 13 11 20 12 25 13 26 **-**55.7∓ 27.2 BOTTOM OF BOREHOLE AT -55.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

hammer falling 30".

**Boring Designation** WR-22-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES WR-22-90 N 366570.5581 E 2340115.442 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss

5. DIRECTION OF BORING DEG FROM BEARING				14. ELEVATION GROUND WATER NA							
VEI	RTICAL CLINED	BOF	:VEDTICAL :	5. DATI	E BOF	RING	STARTED COMPLETED 6/14/90 6/14/9	90			
6. THICKN	NESS OF	FOV	ERBURDEN 18'	6. ELE\	/ATIC	N TO	P OF BORING -37.3' MLLW				
7. DEPTH	I DRILLE	D IN	110 ROCK				ECOVERY FOR BORING N/A				
8. TOTAL	DEPTH	OF F		18. SIGNATURE AND TITLE OF INSPECTOR  James Arthur, P.G.							
J. 10 17 12						,3 /\l		<u>Ф</u>			
	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %		0.5 ft N-Value			
-37.3	-		<b>0':</b> LEAN CLAY (CL), olive green, moist, some sand, calcareous.		1		USCS	0			
	-		1.5': Moist, No fat clay.		2			13			
	-				3			15			
	-				4			20			
	-				5			15			
	-				6			14			
	-				7			14			
	-				8			13			
	-				9			13			
	-				10			16			
	-				11			25			
-55.3	18.0		16.5': Trace shell fragments.		12		DI OWO DED FOOT Newborn in the	30			

BOTTOM OF BOREHOLE AT -55.3 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-23-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-23-90 N 367229.5964 E 2340411.32 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/16/90 6/16/90 16. ELEVATION TOP OF BORING -19.2' MLLW 6. THICKNESS OF OVERBURDEN 36.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -19.2\_ 0': FAT CLAY (CH), gray, wet, trace sand. USCS 0 1 2 0 3 0 0 4 15.8': Trace sand, and shell fragments. 5 0 -36.5 17.3 17.3': CC LEAN CLAY (CL), olive green, moist, some sand, calcareous. 6 13 12

**Boring Designation** 

DRILLING LOG (Cont Sheet)				INSTAL	LATIO	•	SHEET 2			
DKIL	LING	LO	G (Cont Sneet)	Cha	rlest	arbor	of 2 SHEETS			
PROJE	СТ			COORE	INATE	SYS	TEM HORIZONTAL	VERTICAL		
			bor Entrance Channel Deepening	Stat			NAD83	MLLW		
LOCATI	ON COO	RDIN	ATES	ELEVA						
N 36	7229.5		E 2340411.32	-19.						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
- - - - -			<b>17.3':</b> CC LEAN CLAY (CL), olive green, moist, some sand, calcareous. <i>(continued)</i>		8				13	
-					9				9	
-					10				13	
					11				18	
- - - -					12				15	
- - -					13				15	
-			29.3': Trace shell fragments.		14				18	
			30.8': No shell fragments.		15				18	
-	_				16				18	
-			33.8': Trace shell fragments.		17				21	
-56.0	36.8				18				25	
			BOTTOM OF BOREHOLE AT -56.0 ft				BLOWS PER FOOT: Number requ	uired		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-24-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-24-90 N 367125.6523 E 2340696.331 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 6/17/90 6/17/90 16. ELEVATION TOP OF BORING -7.7' MLLW 6. THICKNESS OF OVERBURDEN 47.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': FAT CLAY (CH), gray, wet. USCS 0 1 2 0 15.9': Trace sand, and shell fragments, slightly calcareous. 3 0 4 0

Boring Designation WR-24-90

				,			Boring Designation	WR-24-90	
DRII	LING	LO	G (Cont Sheet)	INSTAL	SHEET				
PROJE			- (			arbor : HORIZONTAL	OF 2 SHEET		
		11	han Fathanaa Ohannal Daaraasia	COORD	INA F	= SYS	HORIZONTAL	. VERTICAL :	
			bor Entrance Channel Deepening	Stat			NAD83	MLLV	V
LOCATI	ON COO	RDIN	ATES	ELEVAT	ION T	ГОР О	F BORING		
N 36	7125.6		E 2340696.331	-7.7					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			0': FAT CLAY (CH), gray, wet. (continued)						
- - - - - - - - - - - - - - - - - - -	E				_				
Ξ	Ę				5				0
=	F								
=	F								
Ξ	F								
-36.9	29.2								
			29.2': LEAN CLAY (CL), olive green, some sand.						
=	F				6				4
=	E					1			
=	F				7				13
=	<u> </u>								
=	E								
=	F				8				11
Ξ						1			
=	F				9				12
Ξ	E								
=	F								
=	F				10				14
=	F					1			
Ξ	F				11				13
Ξ	Ę.								
Ξ	Ę								
=	F				12				14
=	E					1			
=	F				13				15
=	_								
Ξ	Ė				14				15
Ξ	Ė					1			
Ξ	Ė				15				16
=	<u> </u>								
=									
=	Ė				16				20
Ξ	Ė					1			<u> </u>
=	Ė				17				22
-54.9	47.2								
			BOTTOM OF BOREHOLE AT -54.9 ft				BLOWS PER FOOT: Number re	auired	

BOTTOM OF BOREHOLE AT -54.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-25-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-25-90 N 367745.6922 E 2340996.216 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/18/90 6/18/90 16. ELEVATION TOP OF BORING -4.8' MLLW 6. THICKNESS OF OVERBURDEN 49.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -4.8 0': FAT CLAY (CH), gray, wet, trace sand, and shell USCS fragments. 1 0 3.3': No sand or shell fragments. 2 0 3 0 0 4 5 0

**Boring Designation** WR-25-90

			0 (0 - 1 0) - 10	INS	STALL	ATIO	N		K-25-90 SHEET	2
		LO	G (Cont Sheet)	(	of 2 si					
PROJEC		Harl	por Entrance Channel Deepening		ORDI				/ERTICAL	
	ON COO				State			NAD83	MLLV	V
			E 2340996.216	-4.8'						
			FIELD CLASSIFICATION OF MATERIALS			Š			# 8 <u>/</u>	en
ELEV	DEPTH	LEGEND	(Description)		% REC	Samp No.	g%	REMARKS	Blows/ 0.5 ft	N-Value
			<b>0':</b> FAT CLAY (CH), gray, wet, trace sand, and she fragments. <i>(continued)</i>	·III		6				0
-38.1						7				0
-			<b>33.3':</b> CLAYEY GRAVEL LEAN CLAY (CL), olive green, moist, some sand, calcareous.			8				12
						9				18
						10				9
						11				15
=						12				14
						13				12
=						14				16
						15				16
						16				18
						17				22
-54.6	49.8					18				14
			BOTTOM OF BOREHOLE AT -54.6 ft  NOTE: Soils visually field classified in accordance with the Unified Soil Classification System					BLOWS PER FOOT: Number require to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".	ed ·	

**Boring Designation** WR-26-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-26-90 N 367893.612 E 2340587.2 Failing 1500 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 23 23 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/19/90 6/19/90 INCLINED 16. ELEVATION TOP OF BORING -10.4' MLLW 6. THICKNESS OF OVERBURDEN 44.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO F0,29999999999997 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -10.4-0': FAT CLAY (CH), gray, wet, trace sand, and shell USCS fragments. 0 1 2 0 -19.8 9.4 9.4': SS CLAYEY SAND (SC), fine; gray, wet, trace shell fragments. 3 0 0 4 14.6': SAND, fine to medium. 5 6  $-26.5 \pm 16.1$ 16.1': SILTY SAND (SM), fine to medium; gray, wet, some shell fragments, trace clay. 6 0  $-28.0 \mp 17.6$ 17.6': CLAYEY SAND (SC), fine to medium; gray, wet, trace shell fragments. 7 6 -29.5<del>+</del>19.1 19.1': SILTY SAND (SM), medium to coarse; gray, wet, with shell fragments, trace clay, slightly 8 3 calcareous  $-31.0 \mp 20.6$ 20.6': CLAYEY SAND (SC), medium to coarse; gray, wet, with shell fragments, slightly calcareous. 9 2 8 23.6': CLAYEY SAND, fine to medium: tannish

**Boring Designation** WR-26-90

							Boring Designation	WR-26-90		
DRIL	ORILLING LOG (Cont Sheet)				ATIO		arbor	SHEET 2 OF 2 SHEETS		
PROJE			,	COORD				VERTICAL		
		Harl	bor Entrance Channel Deepening							
	ON COO			State			E POPING	MLLW	/	
				ELEVATION TOP OF BORING						
N 36	7893.6		E 2340587.2	-10.4						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
-			gray, trace shell fragments, non-calcareous.  20.6': CLAYEY SAND (SC), medium to coarse; gray, wet, with shell fragments, slightly calcareous. (continued)  25.1': SAND, medium to coarse; gray, with shell fragments.		10				19	
	26.6 		fragments. <b>26.6':</b> LEAN CLAY (CL), olive green, moist, trace sand, calcareous.		12				30	
					13				10	
					14	-			8	
-					15				12	
					16				10	
					17	-			12	
					18	-			14	
					19	-			14	
=					20				9	
-					21				16	
-					22				16	
-55.0	44.6				23				23	

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-27-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-27-94 N 359576.601 E 2335353.542 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/19/94 8/19/94 16. ELEVATION TOP OF BORING -42.2' MLLW 6. THICKNESS OF OVERBURDEN 15.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.2\_ 0': CLAYEY SILT (MH), dark gray to black. USCS 0 1 -46.6 4.4 4.4': LEAN CLAY (CL), olive gray, some sand, trace 2 0 gravel, calcareous. 4.9': SANDY, fine. 11 -48.6<sup>+</sup> 6.4 6.4': CLAYEY SAND (SC), fine; olive gray, calcareous. 3 12 16 20 4 30 25 -56.1 ‡ 13.9 13.9': LEAN SANDY CLAY (CL), olive gray, trace gravel, calcareous. 5 28 -57.6 <del>+</del> 15.4 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -57.6 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-28-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-28-94 N 365007.551 E 2338764.888 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/23/94 8/23/94 16. ELEVATION TOP OF BORING -33.1' MLLW 6. THICKNESS OF OVERBURDEN 22.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33.1-0': CLAYEY SILT (MH), dark gray, trace sand, and USCS shell fragments. 0 -39.5 + 6.4 6.4': FAT CLAY (CH), gray. 2 2 -41.0 7.9 7.9': CLAYEY SAND (SC), fine; olive gray, trace gravel. 3 4 -42.5 + 9.4 9.4': LEAN CLAY (CL), olive gray, some sand, calcareous. 4 8 11 9 5 11 12 12 -51.5 + 18.418.4': CLAYEY SAND (SC), fine; olive gray, calcareous. 6 13 22 7 22 -56.0 ± 22.9 BOTTOM OF BOREHOLE AT -56.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30".

with the Unified Soil Classification System

**Boring Designation** WR-29-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 366126.728 E 2338898.017 WR-29-94 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/23/94 8/23/94 16. ELEVATION TOP OF BORING -40' MLLW 6. THICKNESS OF OVERBURDEN 12.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.5 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40 0': CLAYEY SILT (MH), dark gray to black, some USCS 0 1 -45.0 5.0 5': SILTY SAND (SM), fine; gray, trace clay. 2 4 -46.5 +6.5 6.5': LEAN SANDY CLAY (CL), fine; olive gray, calcareous. 9 3 13 -49.5 – 9.5 9.5': CLAYEY SAND (SC), fine; olive gray, calcareous. 4 14 5 20 -52.5 BOTTOM OF BOREHOLE AT -52.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-30-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-30-97 N 359595.5101 E 2333502.244 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/19/97 6/19/97 16. ELEVATION TOP OF BORING -18' MLLW 6. THICKNESS OF OVERBURDEN 42.9 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 60.9 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -18 0': FAT CLAY (CH), dark gray, trace sand, USCS calcareous. 0 1 18.5': Dark gray, some sand. 2 0

**Boring Designation** WR-30-97

	1			Dorning i	Jesignation	VVIX-30		
DRILLING LOG (Cont Sheet)	INSTAL		SHEET 2 OF 2 SHEET					
PROJECT	COORD	riest	on H	arbor	HORIZONTAL	OF 2		EETS
	COORD	IIVATI	= 515	I EIVI	HORIZONTAL	VERIN	JAL	
Charleston Harbor Entrance Channel Deepening	State	e Pla	ane		NAD83	. M	ILLW	'
LOCATION COORDINATES	ELEVAT	ION 7	ГОР О	F BORING		•		
N 359595.5101 E 2333502.244	-18'							
ELEV DEPTH OF MATERIALS (Description)	% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
0': FAT CLAY (CH), dark gray, trace sand, calcareous. (continued)		65						
-45.9 27.9 27.9': CLAYEY SAND (SC), fine; light olive, calcareous.		3					0 2	12
29.4': Light olive, trace silt.						-	10 4 7 14	21
30.9': Trace gravel.		4				-	14 10 10	20
32.4': LEAN CLAY (CL), light olive, trace gravel, calcareous.		5					5 9 10	19
							10 11 14	25
-54.9 = 36.9							10 13 14	27
36.9': CLAYEY SAND (SC), fine; light olive, calcareous.		6				}	9 13 14	27
-57.9 = 39.9 <b>39.9</b>							8 9 12	21
39.9': LEAN CLAY (CL), light olive, some sand, calcareous.		7					6 7 9	16
41.4': CLAYEY SAND (SC), fine; light olive, calcareous.		8				ļ	5 8 13	21
POTTOM OF POPEHOLE AT 60.0 ft				DI OWE DE	D EOOT: Number re	audra d		

BOTTOM OF BOREHOLE AT -60.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-31-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-31-97 N 360997.2636 E 2334847.857 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED : VERTICAL 15. DATE BORING 6/19/97 6/19/97 16. ELEVATION TOP OF BORING -15.7' MLLW 6. THICKNESS OF OVERBURDEN 41.4' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.1' James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -15.7-0': FAT CLAY (CH), dark gray, trace shale USCS fragments, calcareous. 0 1 13.4': No shell fragments, non-calcareous. 0 2 19.4': Trace wood. 0 21.2': Some sand, no wood. 0 3

Boring Designation WR-31-97

					Boring Designation	n WK-31-9	<u> </u>		
DRII I ING I	OG (Cont Sheet)	INSTALLATION SHEET							
			rlest	of 2 s	HEETS				
PROJECT		COORE	INAT	E SYS	TEM HORIZONT	TAL VERTICAL			
Charleston F	larbor Entrance Channel Deepening	Stat	e Pla	ane	NAD8	33 : MLL\	Ν		
LOCATION COORI	DINATES	ELEVA	•						
N 360997.26	636 E 2334847.857	-15.	7'						
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value		
-39.1 = 23.4			- 0,						
#	23.4': SAND (SP), fine; gray, Poorly Graded, trace					0			
Ŧ	silt.		4			6	9		
-40.6 24.9	OA OL OU TV OAND (ON) "			-		3	_		
± !	24.9': SILTY SAND (SM), fine; gray.		_			1	٠,		
<del>I</del>	· <mark>[+</mark> ]		5			2	4		
<u>-42.1 + 26.4</u>	<b>26.4':</b> SAND (SP), fine to medium; gray, Poorly			1		3			
+	Graded, trace silt.		6			5	13		
-43.6 <sup>±</sup> 27.9						8	┤		
+0.0 = 27.0	27.9': CLAYEY SAND (SC), fine; olive, calcareous.			1		5			
± •/			7			9	16		
<b>+</b> •						7			
<b>#</b>	29.4': Trace shell fragments.					12			
<u> </u>						14	35		
± •	( <u>///</u>					21			
# 2	30.9': No shell fragments.					0	4 _		
王 🕏						3	8		
± •				-		5			
+ 2	<b>/*/</b> /		8			9	20		
Ŧ <b>6</b>			"			11	- 20		
+ 2				1		7			
± 2						9	20		
-51.1 = 35.4	1/2/2 					11			
+	35.4': LEAN CLAY (CL), olive, some sand,					4			
<b>士</b>	calcareous.		9			10	22		
# /						12			
Ŧ	36.9': Trace sand.		1			6	_		
- 美			1			11	26		
± /	<b>38.4':</b> Some sand.		1			15			
+	30.4 . Suffle Saffu.					12	25		
<b>= 2</b>			1			13	- 23		
+	<b>39.9':</b> Trace sand.			1		6			
#	5515 1 11455 541141		10			8	18		
-57.1 + 41.4						10	7		
/	BOTTOM OF BOREHOLE AT -57.1 ft			-	BLOWS PER FOOT: Numb	er required	•		

BOTTOM OF BOREHOLE AT -57.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-32-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-32-97 N 362480.475 E 2336245.397 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/20/97 6/20/97 16. ELEVATION TOP OF BORING -12.9' MLLW 6. THICKNESS OF OVERBURDEN 42.1' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 55' 8. TOTAL DEPTH OF BORING James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -12.9-0': SILTY SAND (SM), fine to medium; dark gray, USCS some shell fragments, calcareous. 0 1 -22.3 + 9.4 9.4': FAT CLAY (CH), dark gray, some sand. 2 0 0  $-29.2 \pm 16.3$ 16.3': SILTY SAND (SM), fine; gray, trace clay. 3 0 -32.3 + 19.419.4': CLAYEY SAND (SC), fine to medium; gray. 0 4 0 1 1

**Boring Designation** WR-32-97

DRILLING LOG (Cont Sheet)			INSTAL		SHEET 2				
		LU	G (Cont Sneet)				larbor	OF 2 SH	HEETS
PROJE				COORI	ITANIC	E SYS	STEM HORIZONTAL	VERTICAL	
1			bor Entrance Channel Deepening		e Pla		NAD83	MLLW	
LOCAT	ON COO	RDIN	ATES	ELEVA	TION	ГОР О	DF BORING		
N 36	2480.4	_	E 2336245.397	-12.					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			<b>19.4':</b> CLAYEY SAND (SC), fine to medium; gray. (continued)						0
-41.5	28.6		<b>28.6':</b> SAND (SP), fine to medium; light gray, Poorl Graded.	у				0	
-43 N	30.1		Graded.		5			7	23
_	t		30.1': CLAYEY SAND (SC), fine; olive, calcareous.			1		0	
-					6			0	3
-	Ė							3	
-	Ė							0	3
=	Ė.							3	
-	ŧ							3	<u> </u>
-	<del>-</del>							6	13
	Ŧ					-		5	
-	F				7			9	19
-49.0	36.1							10	
-	Ŧ		<b>36.1':</b> LEAN CLAY (CL), light olive, some sand, and silt, calcareous.	d				8	ļ ,
-	ŧ		o, oa.oa.ooao.		8			11	24
_	Ė		<b>37.6':</b> Olive, trace sand, and shell fragments.			1		6	
-	ŧ							7	17
-	<u> </u>							10	
:	Ė							6	26
	Ė							12	26
	Ė							8	
	‡				9			11	25
-55.0_	42.1		POTTOM OF PODELIOLE AT . FF 9.6				DI OWO DED EGGE NI	14	

BOTTOM OF BOREHOLE AT -55.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-33-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-33-97 N 363882.6031 E 2337710.0225 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/21/97 6/21/97 -15.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 37.2 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.5 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -15.3\_ 0': SILTY SAND (SM), fine to medium; dark gray, USCS some shell fragments, calcareous. 0 6.8': Trace clay. 0 0 1 1 0 1 2 2 4 2 -26.8 ‡ 11.5 11.5': CLAYEY SAND (SC), fine to medium; dark 0 gray, calcareous. 3 3 9 6 13': Some shell fragments. 0 1 1 0 -30.5 + 15.215.2': FAT CLAY (CH), dark gray, trace sand, and shell fragments. 0 4

**Boring Designation** WR-33-97

	INICTAL	LATIO	N.I.	Boring Designation V	VR-33-97		
DRILLING LOG (Cont Sheet)	INSTAL		larbor	SHEET 2 OF 2 SHEET			
PROJECT	COORDINATE SYSTEM HORIZONTAL VERTICAL						
Charleston Harbor Entrance Channel Deepening	Stat	e Pla	ne	NAD83	MLLW		
LOCATION COORDINATES				OF BORING			
N 363882.6031 E 2337710.0225	-15.	3'					
ELEV DEPTH DEPTH FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
15.2': FAT CLAY (CH), dark gray, trace sand, and shell fragments. (continued)		8				0	
27.1': CLAYEY SAND (SC), fine to medium; dark gray, trace shell fragments.		5				0	
29.7': SAND (SP), fine to medium; light gray, Poorl Graded.	у	6			9	11	
30.7': LEAN CLAY (CL), olive, trace sand, and gravel, calcareous.		7	-		7 12 13	25	
32.7': Some sand.		8			5 8 12	20	
34.2': CLAYEY SAND (SC), fine; olive, trace grave calcareous.	I,	9			5 9 10	19	
-52.5 - 37.2		10			8 16	24	
BOTTOM OF BOREHOLE AT -52.5 ft  NOTE: Soils visually field classified in accordance with the Unified Soil Classification System				BLOWS PER FOOT: Number requ to drive 1-3/8"ID splitspoon w/140 hammer falling 30".	iired lb.		

**Boring Designation** WR-34-98 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-34-98 N 360005.4 E 2334273.17 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 14 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/9/98 8/9/98 16. ELEVATION TOP OF BORING -23.5' MLLW 6. THICKNESS OF OVERBURDEN 40.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 64.3 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -23.5-0': LEAN SILT (ML), gray, some shell fragments, USCS trace sand, slightly calcareous. 0 1 2.3': Shell fragments. 2 9 -27.3 3.8 3.8': FAT CLAY (CH), gray, some shell fragments. 3 0 4 4 6.9': Trace shell fragments. 5 0 6 0 7 0 0 8 16': Some shell fragments. 9 0 21.6': Trace shell fragments.

**Boring Designation** WR-34-98

						Boring Designation	<u>WR-34</u>		2			
DRILLING L	DRILLING LOG (Cont Sheet)					INSTALLATION SHEET OF 2						
PROJECT	· · · · · · · · · · · · · · · · · · ·		ORDI				: VERTIC					
Charleston F	larbor Entrance Channel Deepening	State Plane NAD83					i M	MLLW				
LOCATION COOR	DINATES					DF BORING	; '''	,				
	E 2334273.17		-23.5									
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value			
-47.8 = 24.3	3.8': FAT CLAY (CH), gray, some shell fragments (continued)	•										
-50.7—27.2	24.3': CLAYEY SAND, fine; gray, trace shell fragments.			11					0			
-52.8 29.3	27.2': Wash.								<u> </u>			
-54.3 <del>+</del> 30.8	29.3': CLAYEY SAND (SC), fine; gray, some silt, trace shell fragments.			12					30			
-57.8 34.3	<b>30.8':</b> Wash.											
-59.3 + 35.8	34.3': SILTY SAND (SM), fine; gray, some clay, a shell fragments, slightly calcareous.	nd		13					14			
-62.8 39.3	<b>35.8':</b> Wash.											
-64.3 + 40.8	39.3': CLAYEY SAND, fine; olive gray, calcareous	i.		14					31			
01.0   10.0	BOTTOM OF BOREHOLE AT -64.3 ft					BLOWS PER FOOT: Number red to drive 1-3/8"ID splitspoon w/140	quired					
	NOTE: Soils visually field classified in accordance with the Unified Soil Classification System					hammer falling 30".	J ID.					

**Boring Designation** WR-35-98 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-35-98 N 361460.54 E 2335716.41 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/9/98 8/9/98 16. ELEVATION TOP OF BORING -24.7' MLLW 6. THICKNESS OF OVERBURDEN 35.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 60' James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -24 0': FAT CLAY (CH), gray, trace silt, and shell USCS fragments. 0 1 8.1': No sand or silt. 0 2 -36.9 + 12.212.2': CLAYEY SAND (SC), fine; gray, some wood. 3 0 -38.9 14.2 14.2': SILTY SAND (SM), fine; light gray and gray, some clav. 9 4 5 8 -41.9 + 17.2 17.2': SAND (SP), fine; light gray, Poorly Graded, trace silt, and shell fragments. 6 13 <u>-43.4 ‡ 18.7</u> 18.7': SILTY SAND (SM), fine to medium; light gray, trace clay, and shell fragments. 10

							<b>Boring Designation</b>	WR-35	<u>5-98</u>			
DRII	LING	IΩ	G (Cont Sheet)	INSTALLATION SHEET								
			<del>o (oom onot)</del>	COOR		OF 2 SHEETS						
PROJE		Llow	har Entranas Channal Deananing	COOR	VERTICAL							
			bor Entrance Channel Deepening	State Plane NAD83 N								
LOCAT	ON COO	RDIN.	ATES	ELEVA	TION	TOP C	OF BORING	·				
N 36	1460.5		2335716.41	-24								
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-44.9 z	20.2		20.2': CLAYEY SAND (SC), fine; olive gray, calcareous.		8					8		
-47.9	23.2				9					12		
-49 4	24.7		<b>23.2':</b> LEAN CLAY (CL), olive gray, some silt, and sand, calcareous.		10					16		
-53.5	28.8											
-55.0	30.3		<b>28.8':</b> CLAYEY SAND (SC), fine; olive gray, calcareous.		11					17		
-	33.8		<b>30.3':</b> Wash.									
-60.0	35.3		<b>33.8':</b> LEAN CLAY (CL), olive gray, some silt, trace sand, calcareous.		12					38		
	, 55.5	11/	BOTTOM OF BOREHOLE AT -60.0 ft			1	BLOWS PER FOOT: Number rec	quired				
			NOTE: Soils visually field classified in accordance				to drive 1-3/8"ID splitspoon w/14/hammer falling 30".	θlb.				

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-36-98 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-36-98 N 362886.63 E 2337149.28 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/10/98 8/10/98 16. ELEVATION TOP OF BORING -23.4' MLLW 6. THICKNESS OF OVERBURDEN 40.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.8 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -23.4 0': SILTY SAND (SM), fine; gray, some shell USCS fragments, slightly calcareous. 0 1 3.1': Trace clay, and shell fragments. 2 0 9': Some clay. 3 0 0 0

**Boring Designation** WR-36-98 INSTALLATION SHEET **DRILLING LOG (Cont Sheet)** Charleston Harbor 2 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 362886.63 E 2337149.28 -23.4' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV **DEPTH** Samp **REMARKS** RQD % (Description) 0': SILTY SAND (SM), fine; gray, some shell fragments, slightly calcareous. (continued) 24.1': Some clay, and shell fragments. 6 11 -49.0<sup>±</sup> 25.6 25.6': Wash. -52.5 29.1 **29.1':** SAND (SP), medium to coarse; gray, Poorly Graded, some shell fragments. 7 9  $-54.0 \mp 30.6$ 30.6': Wash. <u>-57.3  $\pm$  33.9</u> 33.9': LEAN CLAY (CL), olive gray, some silt, and sand, calcareous. 8 26  $-58.8 \pm 35.4$ 35.4': Wash.

BOTTOM OF BOREHOLE AT -63.8 ft

sand, calcareous.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

38.9': LEAN CLAY (CL), olive gray, some silt, and

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

 $-62.3 \pm 38.9$ 

 $-63.8 \pm 40.4$ 

9

24

**Boring Designation** WRB-10-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-10-81 N 362130.481 E 2337634.587 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/14/81 5/14/81 16. ELEVATION TOP OF BORING -45' MLLW 6. THICKNESS OF OVERBURDEN 8.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45 0': ORGANIC SILT (OH), black. USCS 0 -50.5 5.5 5.5': MH SILTY FAT CLAY (MH), green. 1 11 12 BOTTOM OF BOREHOLE AT -53.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-11-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-11-81 N 362020.508 E 2337764.603 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/18/81 5/18/81 16. ELEVATION TOP OF BORING -38' MLLW 8' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38 0': ORGANIC SILT (OH), black. USCS 0 -40.0<u>+</u> 2.0 2': SILTY FAT CLAY (MH), gray. 1 9 2 11 12 3 11

BOTTOM OF BOREHOLE AT -46.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

<u>-46.0  $\pm$ </u>

8.0

**Boring Designation** WRB-12-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES WRB-12-81 N 362990.562 E 2338184.427 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Parden 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/20/81 5/20/81 16. ELEVATION TOP OF BORING -41.5' MLLW 5' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46.5' Thomas W. Scott

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-46.5_ - - - -43.5			0': ORGANIC SILT (CH), black.				USCS		0
- - - - -			2': CLAYEY FAT SILT (MH), green.		1				8
-46.5	<del>-</del> - -				2				12

BOTTOM OF BOREHOLE AT -46.5 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

Boring Designation WRB-13-81

DRILLING LOG South Atlantic Division South Atlantic Division South Atlantic Division Charleston Harbor South Carolina NAD83 SHEET 1 OF 1 SHEETS

1. PROJECT South Carolina NAD83 MLLW

Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW

10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail

2. HOLE NUMBER LOCATION COORDINATES WRB-13-81 N 362870.589 E 2338314.445 CME 45

Charleston Harbor Entrance Channel Deepening			State Plane - South	MLLW					
	·	· ·	10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail						
	LOCATION COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL						
WRB-13-81	N 362870.589 E 23	338314.445	CME 45	_	_				
3. DRILLING AGENCY			12. TOTAL SAMPLES	DISTURBED	UNDISTURBED				
U.S. Corps of Engineers - Savannah District			2	2	0				
4. NAME OF DRILLER			13. TOTAL NUMBER CORE BOXES 0						
Perry Roundtree			14. ELEVATION GROUND WATER NA						
5. <u>DIRECTION</u> OF BORING	: DEG FROM	BEARING		•					
	VERTICAL		15. DATE BORING	STARTED 5/20/81	COMPLETED 5/20/81				
6. THICKNESS OF OVERBUR	RDEN 4'	•	16. ELEVATION TOP OF BO	ring -46' MLL	.Ŵ				
7. DEPTH DRILLED INTO RO	CK 0'		17. TOTAL CORE RECOVER	RY FOR BORING N/A	4				
	<u> </u>		18. SIGNATURE AND TITLE OF INSPECTOR						
8. TOTAL DEPTH OF BORING 50'			Thomas W. Scott						

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-46 _ - -47.0	1.0		0': SILT (OH), black.				USCS		0
-			1': CLAYEY FAT SILT (MH), green.		1				9
-50.0	4.0				2				10
	BOTTOM OF BOREHOLE AT -50.0 ft BLOWS PER FOOT: Number required								

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID

splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-14-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-14-81 N 362750.614 E 2338434.463 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/18/81 5/18/81 16. ELEVATION TOP OF BORING -43' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43 USCS 0': ORGANIC SILT (OH), black. 0 1 -47.5 -4.5 4.5': SILTY FAT CLAY (MH), green. 2 10 3 3 -50.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.5 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-15-81

							Boring Designation	WRB-	<u>15-8</u>	<u>1</u>		
DRILLING LOG		DIVISION	INS	STALL	ATIO	N		SHEET	•	1		
		South Atlantic Division	(	Char	lesto	on H	arbor	OF 1	SH	EETS		
1. PROJECT		9. (	9. COORDINATE SYSTEM					VERTICAL				
Charleston Harbor Entrance Channel Deepening		;	State	Pla	ne -	South Carolina NAD83	MLLW					
		10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail										
2. HOLE NUMBER LOCATION COORDINATES WRB-15-81 N 363610.697 E 2338999.301					11. MANUFACTURER'S DESIGNATION OF DRILL CME 45							
3. DRILLING AGENCY U.S. Corps of Engineers - Savannah District			12.	TOT	AL SA	UNDISTURBED 0						
4. NAME OF DRILLER			13. TOTAL NUMBER CORE BOXES 0									
Perry Roundtree		DEC FROM DEADING	14. ELEVATION GROUND WATER NA									
5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL INCLINED		15.	15. DATE BORING STARTED COMPLETED 5/20/81 5/20/81									
6. THICKNESS OF OVE	RBURDE	N 4'	16. ELEVATION TOP OF BORING -44' MLLW									
7. DEPTH DRILLED INTO ROCK 0'		17. TOTAL CORE RECOVERY FOR BORING N/A										
8. TOTAL DEPTH OF BORING 48'		18. SIGNATURE AND TITLE OF INSPECTOR     Thomas W. Scott										
ELEV DEPTH GENT		FIELD CLASSIFICATION OF MATERIALS (Description)	•	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-44	<b>0':</b> No re	ecovery.					USCS			0		
-46.5 + 2.5	1': SILT	Y SAND (SM), fine to medium; green.			1					13		
<del>-</del> + + + + + + + + + + + + + + + + + + +	<b>2.5':</b> CL	AYEY FAT SILT (MH), green.			2					17		
-48.0	BOTTO	M OF BOREHOLE AT -48.0 ft					BLOWS PER FOOT: Number r	equired				

BOTTOM OF BOREHOLE AT -48.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-16-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CME 45 WRB-16-81 N 364455.767 E 2339494.143 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/20/81 5/20/81 16. ELEVATION TOP OF BORING -24' MLLW 6. THICKNESS OF OVERBURDEN 27 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -24 0': No recovery. USCS 0  $-36.0 \pm 12.0$ 12': CLAYEY FAT SILT (MH), gray. 1 4 2 7 17 3 23 17 12 11 4 8 11 5 12 <u>-51.0</u>≢27.0 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID nlitspoon w/140 lb. hammer falling 30'

**Boring Designation** WRB-17-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-17-81 N 363030.545 E 2338099.422 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/20/81 5/20/81 16. ELEVATION TOP OF BORING -36.5' MLLW 6. THICKNESS OF OVERBURDEN 9.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.5 0': ORGANIC SILT (OH), black, and sand. USCS 0 1 -40.0 \(\psi\) 3.5 3.5': CLAYEY FAT SILT (MH), gray. 2 1 7 3 4 12 5 11 -46.0<sup>∓</sup> 9.5 BOTTOM OF BOREHOLE AT -46.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-18-81 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-18-81 N 360905.221 E 2336059.83 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/13/81 5/13/81 16. ELEVATION TOP OF BORING -34.5' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 47.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.5\_ 0': ORGANIC SILT (OH). USCS 1 0 <u>-41.5</u> 7.0 7': SILTY SAND (SM), fine to medium; gray. 11 2 15 3 15 18 <u>-47.5  $\pm$  13.</u>0 BOTTOM OF BOREHOLE AT -47.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-3-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-3-81 N 359190.055 E 2334935.144 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/12/81 5/12/51 16. ELEVATION TOP OF BORING -30.9' MLLW 6. THICKNESS OF OVERBURDEN 14.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45' Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.9\_ 0': No recovery.. -35.0 4.1 4.1': SILT (OH), black. 2 1 2 1 -39.0 8.1 8.1': SILTY FAT CLAY (MH), gray. 3 11 4 12 10 5 6 11 45.0 BOTTOM OF BOREHOLE AT -45.0 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-4-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-4-81 N 359310.029 E 2334810.127 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/12/81 5/12/81 -32.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 17.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Thomas W. Scott N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.5 0': No recovery. USCS 0 -42<u>.5</u> + 10.0 10': SILT (OH), black. 1 5 <u>-44.0</u> ‡ 11.5 11.5': SILTY SAND (SM), fine to medium; gray. 2 8 3 1 7 3 <u>-50.0</u>  $\pm$  17.5 BOTTOM OF BOREHOLE AT -50.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-5-81 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CME 45 WRB-5-81 N 359920.161 E 2335605.007 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/13/81 5/13/81 -32.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 18.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51' Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.5-0': No recovery. USCS 0 -48.0 ‡ 15.5 15.5': SILTY ORGANIC SAND (OH). 9 1 -49.5 + 17.017': SILTY SAND (SM), fine to medium; gray. 2 15 -51.0 \pm 18.5 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-6-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 360690.269 E 2336294.862 WRB-6-81 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/14/81 5/14/81 16. ELEVATION TOP OF BORING -32' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32 0': No recovery. USCS -36.5  $\mp$ 4.5 0 -42.5 ‡ 10.5 10.5': ORGANIC SILT (OH), black. 2 2 3 3 15': SILTY SAND (SM), fine to medium; gray. 3 5 4 11 <u>-50.0</u>‡ 18.0 BOTTOM OF BOREHOLE AT -50.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-7-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-7-81 N 360556.296 E 2336424.88 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/13/81 5/13/81 16. ELEVATION TOP OF BORING -31' MLLW 6. THICKNESS OF OVERBURDEN 15.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 46.5' 8. TOTAL DEPTH OF BORING Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -31 0': ORGANIC SILT (OH), soft; black. USCS 0 1 -40.5 \( \frac{1}{2} \) 9.5 9.5': SILTY FAT CLAY (MH), gray. 2 11 3 15 4 9 5 11 -46.5 🕇 15.5 BOTTOM OF BOREHOLE AT -46.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-8-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-8-81 N 361390.284 E 2336464.739 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/14/81 5/14/81 16. ELEVATION TOP OF BORING -37' MLLW 14' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51 Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37 0': No recovery. USCS 0  $-42.0 \pm 5.0$ 5': SILTY SAND (SM), fine to medium; green. 5 1 -43.5 🖵 6.5 6.5': SILTY FAT CLAY, green. 2 11 3 14 4 15 5 15 6 12 -51.0 + 14.0 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS hammer falling 30". PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Vibracore 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL A-1 N 341270.916 E 2322705.703 Vibracore Generic 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 7/19/97 7/19/97 16. ELEVATION TOP OF BORING 0' MLLW 6. THICKNESS OF OVERBURDEN 12' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 12' **JGM** N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH ELEV Samp REMARKS RQD % (Description) 0 0': CLAY (CL), dark gray mottled with light gray, dry.  $-2.0 \pm 2.0$ 2': CLAY (CL), dark gray mottled with light gray, dry. 7.0 7': CLAY (CL), dark gray, with plant debris, and Note: Core section from 7-12' rootlets, organic rich, contains burrows, sulfide smell. interpretted as relict marsh sediments,

BOTTOM OF BOREHOLE AT -12.0 ft

**10':** CLAY (CL), dark gray, with plant debris, and rootlets, organic rich, contains burrows, sulfide smell.

<u>-10.0 = 10.0</u>

-12.0<sup>±</sup> 12.0

A-1

discarded prior to homogenizing and

sampling.

**Boring Designation** CHDVC-1-1-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-1-1-88 N 364458.4176 E 2328141.068 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 8/20/86 8/20/86 INCLINED -36.9' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 18.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -36.9 0': CLAYEY SAND (SC), fine; gray, and shell fragments. -38.0 \_ 1.1 Start Time: 12:45 1.1': CLAYEY SAND (SC-SM), fine; gray, with clay Stop Time: 12:50 strata or lenses. 1 -41.5 🕇 4.6 4.6': SAND (SP), fine; gray. -42.4 5.5 5.5': SILTY SAND (SM), fine to medium; gray, with clay strata or lenses, and sand strata or lenses. 2  $-47.7 \pm 10.8$ 10.8': SAND (SP), fine to medium; gray, with shell fragments. -48.9<u>+</u> 12.0 12': CLAYEY SAND (SC), medium; gray, with shell -49.5 ‡ 12.6 fragments, and rock fragments. 3 12.6': CLAYEY ORGANIC SILT (MH), gray, with sand strata or lenses. -53.2 16.3 16.1': Clay strata or lenses, and sand strata or 16.3': SILTY SAND (SP-SM), fine; gray. 4 -55.4±18.5 BOTTOM OF BOREHOLE AT -55.4 ft Charleston Harbor & Entrance Channel

Boring Designation CHDVC-13-1-1-86

								Boring Designation	CHDV	<u>C-13</u>	<u>3-1-1</u>
DRILLING L	.OG	DIVISION South Atlantic Di	vision	INSTALLATION SHEET Charleston Harbor OF 1 Si							
1. PROJECT		Court / Marillo Di	VIOIOTI					/STEM	VERTI		
Charleston Hark	bor Entr	ance Channel Deep	pening					South Carolina NAD83	. N	1LLW	
O LIGHT NUMBER		0471011 0000001114750						OF BIT			
2. HOLE NUMBER CHDVC-13-1-1-		CATION COORDINATES  367912.4471 E 2	2328787.485					ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY	•			12. T			MPLE		UNDIST	URBED	)
Ocean Surveys.  4. NAME OF DRILLER							3	3		0	
DMB								R CORE BOXES 0			
5. DIRECTION OF BOR	RING	DEG FROM	BEARING	14. EI	LEVA	ATIO	N GR	OUND WATER NA	COMPLETE		
		VERTICAL		15. D	ATE I	BOF	RING	STARTED 8/2/86		2/86	
6. THICKNESS OF OVE	ERBURDE	N 12.7'	•	16. EI	LEVA	TIO	N TO	P OF BORING -39.2' MLL	.W		
7. DEPTH DRILLED IN	TO ROCK							ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B		51.9'		18. SI	GNA N/		RE AN	ID TITLE OF INSPECTOR			
										/ <sub>2</sub> + 8/	e e
ELEV DEPTH		FIELD CLASSIFICATION (Description	n)	RI	% EC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-39.2	0': SILT fragmen	Y SAND (SM), fine; dan	k gray, with shell								
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					$\vdash$			Start Time: 11:10 Stop Time: 11:21		1	
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-44.2 5.0											
<b>‡</b>	5': CLA' (Cooper	YEY SANDY SILT (MH	), olive, calcareous								
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-48.4 9.2	9.2': CL	AYEY SANDY SILT (M	L), olive, calcareous								
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-51.9‡12.7	BOTTO	M OF BOREHOLE AT	-51 9 ft								
	With the	Soils visually field class Unified Soil Classificat	iffied in accordance ion System								
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CHDVC-13-A-1-2-86 **Boring Designation** 

DRILLING LOG DIVISION South Atlantia Division					_				Dorning De	signation			-					
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Cha	rleston	Harl	oor Entra	ance (	Channel Dee	pening	-				South Carolin	na NAD83		ИLLW				
							10.	SIZE	AND	TYPE	OF BIT							
	NUMBER				N COORDINATES						R'S DESIGNATIO	N OF DRILL						
			-2-8 <u>6</u> N	1 3679	<u>312.4471 E</u> ∶	2328787.485					500 Vibracore							
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	an Surv		., Inc.							2		2		0				
	OF DRIL	LER					13.	TOTA	L NU	MBEF	R CORE BOXES	0						
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	CTION OF ERTICAL	- BOF	RING		DEG FROM VERTICAL	BEARING					STARTE		COMPLET	ED				
	ICLINED	LINED						15. DATE BORING : 8/2/86 : 8/2/86										
e TUICI	NESS OF OVERBURDEN 12.4'						16. ELEVATION TOP OF BORING -50.2' MLLW											
6. I IIICI							17. TOTAL CORE RECOVERY FOR BORING 100%											
7. DEPT	DEPTH DRILLED INTO ROCK 0'						18. SIGNATURE AND TITLE OF INSPECTOR											
8 TOTA	TAL DEPTH OF BORING 62.6'						10.		ATUR I/A	KE AIN	ID TITLE OF INSP	ECTOR						
															Φ			
ELEV	DEPTH	GEND	F	CLASSIFICATION	OF MATERIALS		%	p No.			REMARKS		Blows/ 0.5 ft	N-Value				
	J	E E			(Description	on)		REC	Samp	RQD %				<u>ജ</u> o	> <u></u>			
-50.2	=					.), olive, calcareous												
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-62.6	- 12.4		DOTTO:		000511015 :=													

BOTTOM OF BOREHOLE AT -62.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-14-1-1-86

DRILLING LC		INSTALLATION SHEET 1 Charleston Harbor of 1 she									
	vision								EETS		
1. PROJECT Charleston Harbo	or Entrance	Channel Deer	enina					YSTEM South Carolina NAD83	: VERTI	cal 1LLW	
Chaneston harbo	) Lilliance	Charmer Deep	eriirig					OF BIT	<del>-:</del>		
2. HOLE NUMBER CHDVC-14-1-1-8		on coordinates 3327.3026 E 2	332269.005	(	OSI I	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
<ol> <li>DRILLING AGENCY         Ocean Surveys.,</li> </ol>	Inc			12.	TOTA	L SA	MPLE 3	DISTURBED 3	UNDIST	URBED 0	'
4. NAME OF DRILLER	1110.			13	TOTA	d NU		R CORE BOXES 0	<u>:</u>	0	
DMB								OUND WATER NA			-
5. DIRECTION OF BORIN VERTICAL INCLINED	NG	DEG FROM VERTICAL	BEARING		DATE				OMPLETE 8/2	D 2/86	
6. THICKNESS OF OVER	RBURDEN	17.6'		16. ELEVATION TOP OF BORING -24.2' MLLW							
7. DEPTH DRILLED INTO	) ROCK	0'						ECOVERY FOR BORING 88%			
8. TOTAL DEPTH OF BO	RING	41.8'		18.		ATUF <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR			
					1					76	<u>e</u>
ELEV DEPTH Q		CLASSIFICATION ( (Description	)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
‡ <b>11</b> s	shell fragments, 3" to 4" zones of shell hash an										
a la la	ne first 1.9". After 1/16" thick lenses	1.9", to 7", the silt had of sand.	as				Start Time: 14:27 Stop Time: 14:31				
<b>=</b>							Penetrometer - 0.75 TSF				
<b>#</b>	sand within the first 1.9". After 1.9", to 7", the sand within the first 1.9". After 1.9", to 7", the sand few randon 1/16" thick lenses of sand.										
<b>‡</b>											
<b>並</b>											
# #											
$\pm$											
₹ 1											
-31.8 7.6											
	ragments.	ine; gray and white	e, and shell								
<u> </u>											
<b>‡</b>											
<u> </u>											
						•				-	
# ::						2					
<u> </u>											
-38.8 14.6	4 6'- SII TV 9	SANDY CLAY, oliv	e calcareous								
	Cooper Marl		re, calcareous								
# ///											
# ///						_				-	
-41.8 = 17.6						3					
В	BOTTOM OF	BOREHOLE AT -	41.8 ft								
N	NOTE: Soils	visually field classi ed Soil Classificati	fied in accordance								
,	viai ale Offiffe	au Juli Ciassilicati	on System								

Boring Designation CHDVC-15-1-1-86

			N (1010N)	1	13.10	STALL	A T.O		Donnig Des	gnation	CLIDA		
DRILLING	DRILLING LOG South Atlantic Division								arbor		SHEE'	т 1 <b>1</b> sні	
1. PROJECT	ı. '	l .			9. (	COOR	DINA	TE S	YSTEM South Carolina	NVDos	VERTI		
Charleston F	ları	oor Entrar	nce Channel Deep	pening					South Carolina OF BIT	NAD83	<u> </u>	ILLVV	
2. HOLE NUMBER			TION COORDINATES						R'S DESIGNATION	OF DRILL			
CHDVC-15-7 3. DRILLING AGEN		-86 N 3	357646.3895 E 2					el 15	500 Vibracore	TURBED	UNDIST	URBEC	-
Ocean Surve	eys	., Inc.						4		4		0	
4. NAME OF DRILL DMB	_ER								R CORE BOXES	0			
5. DIRECTION OF VERTICAL	BOF	RING	DEG FROM VERTICAL	BEARING					OUND WATER STARTED	NA	COMPLETE	D	
INCLINED			VERTICAL			DATE			8/	/2/86	8/2	/86	
6. THICKNESS OF	OV	ERBURDEN	20'						P OF BORING	-33.3' MLL	_W		
7. DEPTH DRILLE	O IN	TO ROCK	0'						ECOVERY FOR BO  ID TITLE OF INSPEC				
8. TOTAL DEPTH (		BORING	53.3'				I/A		Γ				
ELEV DEPTH	LEGEND	FIE	ELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	R	EMARKS		Blows/ 0.5 ft	N-Value
-33.3		0': SILTY S	SAND (SP-SM), med	ium; gray, with shell									
#		rragments,	and clay.						Start Time: 14:56			-	
<u> </u>							1		Stop Time: 15:13	}			
Ŧ .													
Ī		3': Brown.											
#	П												
#	Н											-	
1	П	FOL Toron	:::	. Mandan dabah			2						
-39.8 = 6.5		\fragments.			ſ								
主		6.5': CLAY (Cooper M	'EY SANDY SILT (M  arl)	L), olive, calcareous									
士		(Occpoi iii	uii).						Penetrometer - 1	.25 TSF			
丰													
#													
Ŧ							3						
<b>+</b>												-	
<u> </u>													
<b></b>													
<b>±</b>													
士													
												}	
≢							4						
#													
<b>=</b>									Penetrometer - 2	E0 T0F			
<b>±</b>									Penellometer - 2	.50 13F			
<u> </u>													
-53.3 <sup>±</sup> 20.0													
		BOTTOM	OF BOREHOLE AT	-53.3 ft									
		NOTE: So	ils visually field class nified Soil Classificat	ified in accordance									
		with the Of	oa con ciassincat	on Cyclom									

CHDVC-16-1-<u>1</u>-86

							boring Designation (	<u>יאחחיר</u>	<i>,</i> -10	<u>)-   -  </u>		
DF	RILLIN	G L	.OG	DIVISION South Atlantic Division		NSTALI Chai			arbor	SHEET OF 1	1 SHF	
1. PRO	IECT					. COOF	RDINA	TE S	YSTEM	VERTICA		
Cha	rleston	Harl	bor Entr	ance Channel Deepe	ning	State	Pla	ne -	South Carolina NAD83	ML	LW	
				·	1	0. SIZE	AND	TYPE	OF BIT			
	NUMBE			CATION COORDINATES					R'S DESIGNATION OF DRILL			
				N 357068.749 E 233					500 Vibracore	= . ==		
	LING AGE an Sur				1	2. TOT	AL SA	MPLE 4	S DISTURBED 4	UNDISTUF )		)
	OF DRII				1	3 TOT	ΔΙ ΝΙ	•	R CORE BOXES 0			
DME	3				_				OUND WATER NA			
	CTION OI ERTICAL		RING	DEG FROM VERTICAL	BEARING	4. LLL	ATIC	IN GIN		MPLETED		
	NCLINED			VERTICAL :	1	5. DAT	E BOF	RING	8/2/86	8/2/8		
6. THIC	KNESS O	FOV	ERBURDE	EN 18.3'	1	6. ELE	/ATIC	N TO	P OF BORING -38.4' MLLW			
7. DEPT	H DRILLE	ED IN	TO ROCK	0'	<u></u>				ECOVERY FOR BORING 92%			
8. TOTA	L DEPTH	OF E	BORING	56.7'	1		1ATUF <b>1/A</b>	RE AN	ID TITLE OF INSPECTOR			
		GEND		FIELD CLASSIFICATION OF	MATERIALS					7	<u> </u>	en
ELEV	DEPTH	EGE		(Description)	- IVIA I ERIALS	% REC	Samp No.	RQD %	REMARKS		0.5 ft	N-Value
-38.4_				Y SAND (SM), fine; black		+	0)					-
Ξ		.       .	fragmer	nts, and organics, and clay	/.							
] =		•							Start Time: 15.59 Stop Time: 16:15			
=	_	. † [ † ]							Stop Time: 10:10			
=		·         .					1					
-41.7	3.3	• • •	2 21. (1	AYEY SANDY SILT (ML)	olive calcareous						-	
Ξ	Ε Ι	Ш	(Cooper		, olive, calcareous							
Ξ		Ш	, ,									
=	=	Ш							Penetrometer - 1.25 TSF to 1.50 T	SF		
] =	_	Ш										
] =		Ш										
=		Ш										
=		Ш					2					
=		Ш										
Ξ		Ш										
Ξ		Ш										
=		Ш										
=		Ш										
Ξ	Ē	Ш										
Ξ	Ε Ι	Ш										
=							3					
	Ė l											
Ξ		Ш										
=		Ш										
=	-								Penetrometer - 2.5 TSF to 3.0 TSF	_		
=									2.3 131 10 3.0 131			
=	Ė											
Ξ	_											I
	<b> </b>										<u> </u>	
-56.7 <sub>-</sub>	18.3						4					
_ <del></del>	-		вотто	M OF BOREHOLE AT -5	6.7 ft							

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-17-1-1-86

								Boring Designation	СПО		<u>- 1 - 1</u>
DRILLING L	OG	South Atlantic	Division	INSTALLATION Charleston Harbor					SHEE	т 1 1 sн	
1. PROJECT		South Atlantic	DIVISION					YSTEM	: VERTI		EEIS
Charleston Harb	or Ent	rance Channel De	epening	$\vdash$				South Carolina NAD83	. N	1LLW	
2. HOLE NUMBER	: LO	CATION COORDINATE	SS	1	-			ER'S DESIGNATION OF DRILL			
CHDVC-17-1-1-	86 1	N 357046.825 E	2332931.949					500 Vibracore	····		
<ol> <li>DRILLING AGENCY Ocean Surveys.</li> </ol>	. Inc.			12.	TOT	AL SA	MPLI 4	ES DISTURBED 4	UNDIST	URBEE	' <b> </b>
4. NAME OF DRILLER	,			13.	. TOT	AL NU	JMBE	R CORE BOXES 0	_ <del>-</del>		
DMB 5. DIRECTION OF BOR	ING	DEG FROM	BEARING	14.	ELE\	/ATIC	N GF	ROUND WATER NA			
VERTICAL INCLINED		VERTICAL	:		. DATI			8/2/86		D 2/86	
6. THICKNESS OF OVE	RBURDE	≣N 20'		_				P OF BORING -35.9' MLL\	N		
7. DEPTH DRILLED INT	O ROCK	0'						RECOVERY FOR BORING 100%  ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF B	ORING	55.9'		10.		I/A	\L /\l	VE THEE OF INOT ECTOR			
ELEV DEPTH 9		FIELD CLASSIFICATION (Descrip			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-35.9	<b>0'</b> : CLA	YEY SANDY SILT (C	OH), black, organic.		100	თ 1	_	USCSStart Time: 15:07			
<u> </u>					100			Stop Time: 17:21		-	
-38.3 2.4	2 41. 511	TV CLAVEV SAND	(SM), fine; olive brown								
	with she	ells, and shell fragme	nts, contains fossils	١,							
▎ ▁ ▋	(Coope	f Marl).									
								Penetrometer = 0.8 TSF			
-41.3 5.4					100	2					
<u> </u>	<b>5.4':</b> SA Marl).	NDY SILT (MH), oliv	e, calcareous (Cooper	•							
#	,.										
<b> </b>											
± <b>       </b>											
<b></b>											
#											
# # # # # # # # # # # # # # # # # # #					100	2		Penetrometer = 1.7 TSF		-	
<u> </u>					100	3					
<b>#</b>											
Ī											
<b>=        </b>											
<u>±</u>											
# #											
					400						
<u> </u>					100	4					
#											
<b>=</b>								Department 0.75 TOF			
# #								Penetrometer = 2.75 TSF			
#											
=======================================											
-55.9 <sup>‡</sup> 20.0	вотто	M OF BOREHOLE A	T -55.9 ft					<u>l</u>			- 1
			assified in accordance								- 1
	with the	Unified Soil Classific	cation System								
											- 1
											- 1
											- 1
											- 1

Boring Designation CHDVC-18-1-1-86

	DIVISION	INSTAL	LATIO	N.I	Borning Designation	SHEET		۲
DRILLING LOG	South Atlantic Division				arbor	OF 1	1 SHEE	TS
1. PROJECT		9. COO				VERTICAL		コ
Charleston Harbor En	trance Channel Deepening				South Carolina NAD83	MLL	.W	_
					OF BIT			_
	OCATION COORDINATES N 352955.9821 E 2329933.934				ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY		12. TO			-	UNDISTURE	BED	ヿ
Ocean Surveys., Inc.				6	6	: 0		
4. NAME OF DRILLER  DMB					R CORE BOXES 0			_
5. DIRECTION OF BORING	DEG FROM BEARING	14. ELE	VATIC	N GR	OUND WATER NA			_
	VERTICAL	15. DAT	E BOF	RING	STARTED CO 8/3/86	OMPLETED 8/3/86	6	
6. THICKNESS OF OVERBURE	DEN 17.1'	16. ELE	VATIC	N TO	P OF BORING -42.5' MLLW	1		
7. DEPTH DRILLED INTO ROC	o' 0'				ECOVERY FOR BORING 85%			_
8. TOTAL DEPTH OF BORING	59.6'		N/A	RE AN	ND TITLE OF INSPECTOR			
ELEV DEPTH GER	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/	0.5 ft	N-Value
-42.5+ -43.3+ 0.8 <b>0':</b> SA	NDY CLAY (CL), brown.		1		USCS			
	ILTY SAND (SM), fine; brown.				Start Time: 11:31			-
<b>1.7'</b> : S	AND (SP), medium; brown, with shell		2		Stop Time: 11:56			
	ents, and phosphate nodules.		3					_
-45.6	LAYEY SAND (SC), fine; gray, with shell							$\dashv$
-46.8	ents, and rock fragments.		4					_
± 4.3'· C	LAYEY SANDY SILT (MH), olive, calcareous							- 1
<del>=</del> (Coop)	er Marl).							- 1
<u> </u>					Penetrometer - 1.3 TSF to 4.5 TS	}F		- 1
#								- 1
<b>‡</b>								- 1
<b></b>								- 1
<b>‡</b>								- 1
<b>=</b>								- 1
土 🚻								
(Coop)			5					- 1
								$\dashv$
								- 1
#								- 1
<b>+  </b>								- 1
‡								- 1
<b>=        </b>								- 1
<u> </u>								
#								
<b>‡</b>				-				$\dashv$
-59.5 + 17.0	OM OF BOREHOLE AT -59 6 ft		6					_

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-19-1-1-86

		DIVISION	I IN	ISTALL	٨ΤΙΟ	ıNI.	Borning Designation	SHEE		
DRILLING L							arbor		т 1 1 sн	
1. PROJECT				COOF	DINA	TE S	YSTEM	VERTI	CAL	
Charleston Harb	or Entr	rance Channel Deepening	<del></del>				South Carolina NAD83	N	1LLW	
2. HOLE NUMBER		CATION COORDINATES	11	I. MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL			
CHDVC-19-1-1-3. DRILLING AGENCY	86 : N	N 352142.1198 E 2330615					500 Vibracore	LINDICT	LIDDE	$\longrightarrow$
Ocean Surveys.	, Inc.		12	2. TOT	AL SP	4	S DISTURBED 4	UNDIST	0 0	'l
4. NAME OF DRILLER			13	3. TOT	AL NU	JMBEI	R CORE BOXES 0	-		
DMB 5. DIRECTION OF BOR	ING	: DEG FROM : BEARIN	IG 14	4. ELE\	/ATIC	N GR	OUND WATER NA			
VERTICAL INCLINED		VERTICAL		5. DATI	BO	RING	STARTED (8/3/86	COMPLETE 8/3	D 8/86	
6. THICKNESS OF OVE	RBURDE	N 20'					P OF BORING -23.6' MLL\	N		
7. DEPTH DRILLED INT	O ROCK	0'					ECOVERY FOR BORING 100%  ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF B	ORING	43.6'	10		√A/I	NL AIN	ID TITLE OF INSPECTOR			
ELEV DEPTH E		FIELD CLASSIFICATION OF MATER (Description)	RIALS	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-23.6	0': CLA' shell fra	YEY SILT (ML), gray, with organ gments.	ics, and		0)					_
<u> </u>							Start Time: 13:06:00 Stop Time: 13:06:45			
+							Stop Time. 13.00.43			
	2 8'- Sh	ell fragments, and sand, and org	anice							
<b>*</b>	2.0 . 011	chi haginenta, and sand, and org	ariios.							
<b>‡</b>					1	1				
<u> </u>					'	-			-	
#										
<b>董</b>										
+										
<u> </u>							Penetrometer - 0.35 TSF			
#										
<b>=</b>					2	1			-	
#						-			-	=
#										
<b>董</b>										
#										
<b>基</b>										
#										
<b>=</b>					3				-	
<u> </u>						-			-	
#										
Ī										
± <b>         </b>										
#										
<b>=</b>					4	1				$\dashv$
-43.6 = 20.0	BOTTO	M OF BOREHOLE AT -43.6 ft			4					
	with the	Soils visually field classified in ac Unified Soil Classification Syste	ccordance m							
										l

Boring Designation CHDVC-20-1-1-86

		1,	DIVICION	1	INIO	TALL	۸ <b>T</b> IO	N.I.	borning Designation (						
DRILLING	DRILLING LOG DIVISION South Atlantic Division					INSTALLATION SHEET 1 Charleston Harbor OF 1 SHEETS									
1. PROJECT				9	9. C	COOR	DINA	TE S	YSTEM	VERT	CAL				
Charleston I	Harl	bor Entra	nce Channel Deep						South Carolina NAD83	<u> </u>	/LLW	1			
2. HOLE NUMBER	?	:100	ATION COORDINATES						ER'S DESIGNATION OF DRILL						
CHDVC-20-			352001.2186 E 2					_	500 Vibracore						
3. DRILLING AGE					12.	TOTA	AL SA	MPLE		UNDIST		D			
Ocean Surv		., Inc.			12	TOT/	I NII	3	R CORE BOXES 0		0				
DMB									ROUND WATER NA						
5. DIRECTION OF VERTICAL	BOF	RING	DEG FROM VERTICAL	BEARING						MPLETE	ED.				
INCLINED					15.	DATE	ВОР	RING	8/3/86		3/86				
6. THICKNESS OF	OVI	ERBURDEN	19.6'	-					P OF BORING -22.2' MLLW						
7. DEPTH DRILLE	D IN	TO ROCK	0'	_					RECOVERY FOR BORING 98%  ND TITLE OF INSPECTOR						
8. TOTAL DEPTH	OF E	BORING	41.8'		10.		I/A	VE AI	ND TITLE OF INSPECTOR						
ELEV DEPTH	LEGEND	F	IELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value			
-22.2		0': SILTY	CLAY (CL), gray, with				Ø	_							
		and shell	fragments.						0: . T:						
									Start Time: 14:02 Stop Time: 14:03						
1 =															
							1								
-27.2 = 5.0 +		5' CLAY	EY SAND (MH), gray,	with sand and											
_		organics,	and shell fragments.	with barra, arra											
<b>I</b>									Penetrometer - 0.25 TSF to 0.45 T	ΓSF					
l <del>‡</del>															
Ⅰ 重															
l															
1 =															
1 ‡							2								
1 1															
‡															
1															
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1															
土							3								
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1 ±															
1 ±															
1 ‡															
1 =															
1 ‡															
-41.8 <sup>‡</sup> 19.6		BOTTOM	OF BOREHOLE AT	-41.8 ft											
			oils visually field class Jnified Soil Classificat												

Boring Designation CHDVC-21-1-1-86

								V U-Z	<u> </u>
DRILLING L	SILLING LOG South Atlantic Division					N on H	arbor SHE	ЕТ <sup>7</sup> 1 SH	1 =====
1. PROJECT		Godin Adamic Division						TICAL	LLIS
Charleston Harl	bor Er	ntrance Channel Deepening	_				South Carolina NAD83  OF BIT	MLLW	<u>'</u>
2. HOLE NUMBER	. L	OCATION COORDINATES	11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL		
CHDVC-21-1-1-		N 351429.1949 E 2330962.175					500 Vibracore		
3. DRILLING AGENCY Ocean Surveys			12.	TOTA	AL SA	MPLE 4	S DISTURBED UNDI	STURBEI	<sup>)</sup>
4. NAME OF DRILLER	.,		13.	TOTA	AL NU		R CORE BOXES 0		
DMB	DINIO	DEC FROM DEADING	14.	ELEV	'ATIO	N GR	OUND WATER NA		
5. DIRECTION OF BOF VERTICAL INCLINED	RING	DEG FROM BEARING VERTICAL	15.	DATE	BOF	RING	STARTED COMPLE	TED 5/3/86	
6. THICKNESS OF OVI	ERBURI	DEN 19.5'	16.	ELEV	'ATIO	N TO	P OF BORING -24.9' MLLW		
7. DEPTH DRILLED IN	TO ROC	CK 0'					ECOVERY FOR BORING 97%		
8. TOTAL DEPTH OF E			18.		atuf <b>I/A</b>	RE AN	D TITLE OF INSPECTOR		
	0111110			1				70.11	e e
ELEV DEPTH GENTH		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-24.9 -25.7 0.8	<b>0'</b> : SIL	_TY SAND (SP-SM), medium; gray, with shell ents.			1		USCS		
<b>=  </b>	0.8': 0	CLAYEY SANDY SILT (ML), gray, with shell							
	fragm	ents.					Start Time: 16:00:14		
‡							Stop Time: 16:00:52		
<b>王</b>									
<b>+</b>									
‡									
<u> </u>					2				
+									
<b></b>									
<b>王</b>							Penetrometer - 0.25 TSF		
<b>+</b>									
<u></u>									
<b>±</b>									
+									
<u> </u>					3				
#									
<b>+</b>									
<u> </u>									
#									
$\pm$									
<u> </u>									
<b>±</b>					4				
<b>±</b>									
<u> </u>									
<b>=        </b>									
<b>=</b>									
44.4									
-44.4 <del>1</del> 19.5	BOTT	OM OF BOREHOLE AT -44.4 ft							
		E: Soils visually field classified in accordance ne Unified Soil Classification System							
		•							

Boring Designation CHDVC-22-1-1-86

	DIVISION	INICTA		201	Borning Designation	CHIDV		
DRILLING LOG	South Atlantic Division	INSTA			larbor	SHEET OF 1	Г 1 I sнi	
1. PROJECT		9. CO	ORDIN	ATE S	YSTEM South Carolina NAD83	VERTION		
Chanesion Harbor Ent	rance Channel Deepening				E OF BIT			
	OCATION COORDINATES N 351242.2926 E 2331482.2				ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY Ocean Surveys., Inc.		12. TC	TAL S	AMPLE 4	DISTURBED 4	UNDIST	JRBEC 0	)
4. NAME OF DRILLER		13. TC	TAL N		R CORE BOXES 0	<u>:</u>	0	
DMB 5. DIRECTION OF BORING	: DEG FROM : BEARING	14. EL	EVATI	ON GF	ROUND WATER NA			
S. DIRECTION OF BORING VERTICAL INCLINED	VERTICAL	15. DA	TE BC	RING	STARTED C 8/3/86	COMPLETE 8/3		
6. THICKNESS OF OVERBURD	EN 20'				P OF BORING -27.2' MLLV	٧		
7. DEPTH DRILLED INTO ROCK	0'				RECOVERY FOR BORING 98%  ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF BORING	47.2'		N/A					
ELEV DEPTH 9	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-47.2 = 20.0	OM OF BOREHOLE AT -47.2 ft		3		Start Time: 15:14 Stop Time: 15:15 Penetrometer - 0.2 TSF			
BOTTC NOTE:	OM OF BOREHOLE AT -47.2 ft Soils visually field classified in accordance Unified Soil Classification System							

**Boring Designation** CHDVC-23-1-1-86 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS OF 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-23-1-1-86 OSI Model 1500 Vibracore N 350691.2638 E 2331273.295 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL : VERTICAL 15. DATE BORING 8/5/86 8/5/86 16. ELEVATION TOP OF BORING -38.4' MLLW 6. THICKNESS OF OVERBURDEN 18.7 17. TOTAL CORE RECOVERY FOR BORING 97% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.1' N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -38.4 0': SILTY CLAYEY (ML), gray, with organics, and shell fragments, 1/16" to 2" thick lenses of sand and shell hash occurring randomly throughout the Start Time: 14:17 sample. Stop Time: 14:18 Penetrometer - 0.25 TSF to 0.30 TSF 1 2 3

BOTTOM OF BOREHOLE AT -57.1 ft

NOTE: Soils visually field classified in accordance

<u>-57.1 ‡ 1</u>8.7

Boring Designation CHDVC-24-1-1-86

		DIVISION		INICT	ΤΛΙΙ	ATIO	NI	Borning Designation	SHEE		
DRILLING L	DRILLING LOG South Atlantic Division							arbor		т 1 1 sні	
1. PROJECT				9. C	OOR	DINA	TE S	/STEM	: VERTI	CAL	
Charleston Har	bor Er	ntrance Channel Dee						South Carolina NAD83	<u> </u>	1LLW	
	<del>.</del>	00471011 0000001114750						OF BIT			
2. HOLE NUMBER CHDVC-24-1-1		OCATION COORDINATES N 350510.3588 E						er's designation of drill 500 Vibracore			
3. DRILLING AGENCY Ocean Surveys				12. 1	TOTA	L SA	MPLE 4	S DISTURBED 4	UNDIST	URBED	
4. NAME OF DRILLER				13 7	ΓΩΤΔ	J NI		R CORE BOXES 0		U	
DMB								OUND WATER NA			
5. DIRECTION OF BO VERTICAL INCLINED	RING	DEG FROM VERTICAL	BEARING				RING		MPLETE 8/3	D 8/86	
6. THICKNESS OF OV	'ERBURI	DEN 20'		16. E	ELEV	ATIO	N TO	P OF BORING -33.6' MLLW			
7. DEPTH DRILLED IN	ITO ROC	CK 0'						ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF I	BORING	53.6'		18. 5		atuf <b>I/A</b>	RE AN	D TITLE OF INSPECTOR			
ELEV DEPTH GENERAL VIOLEN		FIELD CLASSIFICATION (Description		F	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-33.6—	0': CL	AYEY SILT (ML), gray,	with organics, 1/8" to			S	_			_	
<u> </u>	4" zon	es of sand or shell hash	layers at random								
‡	iiileiva	ai5.						Start Time: 9:22 Stop Time: 9:22			
<u> </u>								D 4 4 0.05 TOF			
<b>1</b>								Penetrometer - 0.25 TSF			
					Ì	4					
<u> </u>						1					
‡											
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# #											
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<b>I</b>											
<b>+ 11</b>					İ	3					
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+											
‡ 📶											
T 🔣											
<del>   </del>					}						$\dashv$
-53.6 ± 20.0						4					
	BOTT	OM OF BOREHOLE AT	-53.6 ft								
	NOTE	: Soils visually field clas	sified in accordance								
	with th	ne Unified Soil Classifica	tion System								

Boring Designation CHDVC-25-1-1-86

DRILLING LO	DIVISION		INSTALLATION SHEET Charleston Harbor OF 1 s						1		
	JG	South Atlantic Div	vision						of 1		EETS
1. PROJECT		Ob D						YSTEM South Carolina NAD83	VERTICA	LW	
Charleston Harbo	or Entr	ance Channel Deep	ening	_				OF BIT	: IVIL	LVV	
2. HOLE NUMBER CHDVC-25-1-1-8		CATION COORDINATES I 348083.3128 E 2	221216 720	11.	MAN	UFAC	CTURE	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY	JO : 10	1340003.3120 L 2	.551510.729				MPLE		UNDISTUR	RBED	)
Ocean Surveys.,	Inc.						4	4	0		
4. NAME OF DRILLER DMB				-				R CORE BOXES 0 OUND WATER NA			
5. DIRECTION OF BORING VERTICAL INCLINED	NG	DEG FROM VERTICAL	BEARING		. DATE				OMPLETED 8/12/8	36	
6. THICKNESS OF OVER	PRIIPNE	N 20'	<u>:</u>	16.	ELE\	/ATIC	N TO	P OF BORING -41.6' MLLW		-	
				17.	TOT	AL CC	DRE R	ECOVERY FOR BORING 100%			
7. DEPTH DRILLED INTO	O ROCK	0'		18.	SIGN	IATUI	RE AN	ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF BO	ORING	61.6'			1	I/A		Г			
ELEV DEPTH VELOCITY	I	FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS	Blows/	0.5 ft	N-Value
-41.60	O': SANE	OY SILTY CLAY (CL), (	gray, with organics.								
<u> </u>								0, , 7, , 10,00			
<b>=</b> ///								Start Time: 10:28 Stop Time: 10:44			
								Penetrometer - 0.25 TSF			
± ///											
+ ///							-			-	
± ///						1					
-47.1 = 5.5							1			F	
= 5	5.5': CLA	AYEY SANDY SILT (MI	H), olive, calcareous	3.							
#											
± <b>1</b>								Penetrometer - 1.25 TSF			
#								T chetrometer 1.23 For			
<b>=</b>											
≢ ■							-				
<b>#</b>						2					
<b>+</b>							1			H	
<b>∓</b> ■											
Ŧ											
± <b>II</b>								Penetrometer - 3.5 TSF			
±								Felletionleter - 3.5 131			
<b>‡</b>											
++++++++++++++++++++++++++++++++++++++							-			-	
<b>= •••••••••••••••••••••••••••••••••••</b>						3					
<b> </b>							1				$\neg$
<b>±</b>											
#											
<b>+</b>								Penetrometer - 2.75 TSF			
#											
<b>T</b>											I
<u> </u>							-				
-61.6 <del>=</del> 20.0						4					
	BOTTO	M OF BOREHOLE AT -	·61.6 ft					ı			
	NOTE: C	Soile vieuelly field aless	ified in accordance								
۲ ۷	with the	Soils visually field class Unified Soil Classificati	on System								
			•								

Boring Designation CHDVC-26-1-1-86

	DIVISION	INIS	STALL	ΔΤΙΩ	NI	Dorning Designation C	SHEET	<del>7  </del>
DRILLING LOG	South Atlantic Division					arbor	of 1 sh	
1. PROJECT		9. (	COOR	DINA	TE S	/STEM :	VERTICAL	
Charleston Harbor En	ntrance Channel Deepening	_				South Carolina NAD83  OF BIT	MLLW	
	OCATION COORDINATES					ER'S DESIGNATION OF DRILL		
CHDVC-26-1-1-86 : 3. DRILLING AGENCY	N 349621.4806 E 2332369.462		OSI I			500 Vibracore S :DISTURBED :U	NDISTURBEI	$\vdash$
Ocean Surveys., Inc.		12.	1017	AL SA	4	:	0 0	
4. NAME OF DRILLER		13.	TOT	AL NU	MBE	R CORE BOXES 0		
DMB 5. DIRECTION OF BORING	: DEG FROM : BEARING	14.	ELE\	/ATIC	N GR	OUND WATER NA		
VERTICAL INCLINED	VERTICAL	15.	DATE	BOF	RING	STARTED COM 8/3/86	PLETED 8/3/86	
6. THICKNESS OF OVERBURE	DEN 20'	_				P OF BORING -41' MLLW		
7. DEPTH DRILLED INTO ROC	O'					ECOVERY FOR BORING 100%  ID TITLE OF INSPECTOR		
8. TOTAL DEPTH OF BORING	61'	10.		I/A	VL AIV	D TITLE OF INSPECTOR		
ELEV DEPTH P	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-41 <b>0'</b> : CL/	AYEY SAND (ML), gray, with organics, with to 3/4" thick lenses of fine sand occurring mly throughout the sample.			1		Start Time: 10:21 Stop Time: 10:21 Penetrometer - 0.35 TSF		
				3				
<b>#</b>								
# # # # # # # # # #								
-61.0 <del>2</del> 0.0				4				
	OM OF BOREHOLE AT -61.0 ft		-					<b>'</b>
NOTE with th	E: Soils visually field classified in accordance ne Unified Soil Classification System							

**Boring Designation** CHDVC-27-1-1-86

DRILLING LOG	DIVISION		ISTALL					1
1. PROJECT	South Atlantic Di		Coor				OF 1 SEVERTICAL	IEETS
Charleston Harbor En	trance Channel Dee	pening	State	Pla	ne -	South Carolina NAD83  OF BIT	MLLW	<u>/</u>
	OCATION COORDINATES N 346382.3315 E 2	11	1. MAN	JFAC	TURE	er's designation of drill 500 Vibracore		
3. DRILLING AGENCY Ocean Surveys., Inc.		12	2. TOT <i>I</i>	AL SA	MPLE 5	S DISTURBED UN 5	NDISTURBE 0	D
4. NAME OF DRILLER		13	3. TOTA	AL NU		CORE BOXES 0		
DMB 5. DIRECTION OF BORING	DEG FROM	BEARING 14	4. ELEV	'ATIO	N GR	OUND WATER NA		
✓ VERTICAL     ☐ INCLINED	VERTICAL		5. DATE			8/5/86	8/5/86	
6. THICKNESS OF OVERBURD						P OF BORING -39.1' MLLW ECOVERY FOR BORING 100%		
7. DEPTH DRILLED INTO ROC			8. SIGN	ATUF		D TITLE OF INSPECTOR		
8. TOTAL DEPTH OF BORING	59.1'		<u> </u>	I/A				Φ
ELEV DEPTH 8	FIELD CLASSIFICATION (Description		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	AYEY SAND (SC), fine; er Marl).	dark olive, calcareous		1		USCS		
	LAYEY SANDY SILT (M er Marl).	IH), olive, calcareous	1	2		Start Time: 16:13 Stop Time: 16:31		
<u> </u>						Penetrometer - 1.5 TSF		
0.8': C ((Coope						Penetrometer - 1.25 TSF		
				3				
<u>+</u> +								
<u> </u>								
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<u> </u>								
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<b>‡</b>								
<b>* * * * * * * * * *</b>								
-59.1 ∓ 20.0 BOTT0	OM OF BOREHOLE AT	-59.1 ft						
NOTE:	: Soils visually field class e Unified Soil Classificat	sified in accordance						
with th	5 51G Goil Glassificat	<b></b>						

CHDVC-28-1-1-86

							Boring Designation	CUDA		3- I-
DRILLING L	OG	DIVISION South Atlantia Division		STALL			orbor	SHEE		1
1. PROJECT		South Atlantic Division					arbor YSTEM	OF VERTI	1 SH	EEIS
	or Entr	ance Channel Deepening	,	State	Pla	ne -	South Carolina NAD83		/ILLW	'
				-			OF BIT			
2. HOLE NUMBER		CATION COORDINATES  J 344715.8231 E 2339267.244					ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY	00 : IN	1 07-1 10.0201 L 2009201.244		TOTA				UNDIST	URBEI	)
Ocean Surveys.	, Inc.					3	3		0	
4. NAME OF DRILLER DMB			13.	TOTA	AL NU	IMBEI	R CORE BOXES 0			
5. DIRECTION OF BOR	ING	DEG FROM BEARING	14.	ELE	/ATIO	N GR	COUND WATER NA	0145: ==		
		VERTICAL	15.	DATE	BOF	RING	STARTED C 8/12/86	OMPLETE 8/1	2/86	
6. THICKNESS OF OVE	RBURDE	n 15.8'	_				P OF BORING -40.3' MLLW RECOVERY FOR BORING 80%	<u> </u>		
7. DEPTH DRILLED INT	O ROCK	0'					ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF BO	ORING	56.1'			I/A		T			ı,
ELEV DEPTH GE P		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-40.3	0': SILT	Y SAND (SP-SM), fine; light gray.								
1 ‡										
<b>1</b> ± <b>1</b>							Start Time: 8:27 Stop Time: 8:29			
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1 +										
1 +										
<b>1</b>										
‡					1					
🖠 📘										
49.6										
-48.6 8.3	8.3': SAI	ND (SP), fine to medium; gray.								
		, ,								
‡ 🗓										
					2					
‡ 🗾										
<b> </b>										
‡ 📴	12.2'· Sh	nell fragments.								
<b>† </b>	12.2.01	ы паушень.								
± -56.1 ± 15.8										
	BOTTO	M OF BOREHOLE AT -56.1 ft		<u> </u>		I	I			l
	NOTF: S	Soils visually field classified in accordance	<b>;</b>							
		Unified Soil Classification System								
					3					

**Boring Designation** CHDVC-29-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 342384.2744 E 2341525.638 CHDVC-29-1-1-86 : OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 DMB 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/8/86 8/8/86 16. ELEVATION TOP OF BORING -35.2' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.2-0': CLAYEY SILT (MH), black, with organics. Start Time: 17:14 Stop Time: 17:15 1 5.2 -40.4 5.2': SANDY CLAY (CL), gray, with shell fragments. Penetrometer - 0.2 TSF 2 -47.4 12.2 12.2': CLAYEY SAND (SC), fine; gray. 3 -51.4 + 16.2 16.2': SILTY SAND (SP-SM), fine; dark olive, calcareous (Cooper Marl). Penetrometer - 1.10 TSF 4  $-55.2 \pm 20.0$ BOTTOM OF BOREHOLE AT -55.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-30-1-1-86

10. SIZE AND TYPE OF BIT  2. HOLE NUMBER LOCATION COORDINATES CHDVC-30-1-1-86 N 341503.2925 E 2341566.792  3. DRILLING AGENCY Ocean Surveys., Inc.  4. NAME OF DRILLER DMB  5. DIRECTION OF BORING STARTED  10. SIZE AND TYPE OF BIT  11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore  12. TOTAL SAMPLES DISTURBED UNDISTUR 4 0  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED COMPLETED COMPLETED COMPLETED	AL LW	
Charleston Harbor Entrance Channel Deepening  State Plane - South Carolina NAD83  10. SIZE AND TYPE OF BIT  11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore  3. DRILLING AGENCY Ocean Surveys., Inc.  12. TOTAL SAMPLES DISTURBED UNDISTUR  4 0  13. TOTAL NUMBER CORE BOXES DISTURBED 14. ELEVATION GROUND WATER NA  STARTED COMPLETED C	RBEC	
10. SIZE AND TYPE OF BIT  2. HOLE NUMBER	RBEC	
2. HOLE NUMBER LOCATION COORDINATES CHDVC-30-1-1-86 N 341503.2925 E 2341566.792  3. DRILLING AGENCY Ocean Surveys., Inc.  4. NAME OF DRILLER DMB  5. DIRECTION OF BORING STARTED  11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore  12. TOTAL SAMPLES DISTURBED UNDISTUR 4 0  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  COMPLETED COMPLET		
3. DRILLING AGENCY Ocean Surveys., Inc.  4. NAME OF DRILLER DMB  5. DIRECTION OF BORING DEG FROM DIRECTION OF BORING DEG FROM DE		
4. NAME OF DRILLER  DMB  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED  COMPLETED  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED	`	)
DMB  5. DIRECTION OF BORING  STARTED  STARTED  COMPLETED	)	
5. DIRECTION OF BORING DEG FROM BEARING  STARTED COMPLETED  COMPLE		
I IXIVERTICAL : VERTICAL : I STARTED COMPLETED		
inclined 15. Date Boring 8/11/86 8/11/8		
6. THICKNESS OF OVERBURDEN 18.8'  16. ELEVATION TOP OF BORING -34.2' MLLW		
7. DEPTH DRILLED INTO ROCK 0' 17. TOTAL CORE RECOVERY FOR BORING 94% 18. SIGNATURE AND TITLE OF INSPECTOR		
8. TOTAL DEPTH OF BORING 53' N/A		
ELEV DEPTH G FIELD CLASSIFICATION OF MATERIALS % G REMARKS	0.5 ft	N-Value
(Description)		ż
U: CLAYEY SILT (MIN), black, with organics.		
Start Time: 12:46		
Stop Time: 12:47		
	ŀ	
39.9 5.7 5.7 5.7 5.7 SILTY SAND (SM), fine; gray, with 1" to 2"		
thick lenses of clay about 10" apart.		
	ŀ	$\overline{}$
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<b>│</b>		
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<b>I</b>		
-47.6 + 13.4   + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +		
13.4': CLAYEY SAND (SC), medium; gray, with.		
	-	
-51.6 + 17.4 <b>///</b>		
17.4': SILTY CLAYEY SAND (SC-SM), fine; olive, calcareous (Cooper Marl).	}	
-53.0 + 18.8   1   calcareous (Cooper Mari).		
BOTTOM OF BOREHOLE AT -53.0 ft		
NOTE: Soils visually field classified in accordance		
I was a straight and the straight of the strai		
with the Unified Soil Classification System		
with the Unified Soil Classification System		1
with the Unified Soil Classification System		
with the Unified Soil Classification System		
with the Unified Soil Classification System		

**Boring Designation** CHDVC-31-1-1-86 INSTALLATION South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 

DISTURBED

0

UNDISTURBED

0

11. MANUFACTURER'S DESIGNATION OF DRILL

OSI Model 1500 Vibracore

4

13. TOTAL NUMBER CORE BOXES

10. SIZE AND TYPE OF BIT

12. TOTAL SAMPLES

**DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/11/86 8/11/86 -34.7' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.7-0': CLAYEY SILT (MH), black, with organics. USCS 1 Start Time: 14:11 Stop Time: 14:12 -39.2 4.5 4.5': SILTY SAND (SP-SM), fine; gray, with 1" to 2" layers of clay every 6-10". 2 3 -45.7 = 11.0 11': CLAYEY SAND, gray, with organics, with 1/16" to 1" layers of sand every 4-5". Penetrometer - 0.25 TSF to 0.50 TSF 4

DIVISION

: LOCATION COORDINATES

BOTTOM OF BOREHOLE AT -54.7 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

N 340743.2598 E 2341346.926

**DRILLING LOG** 

CHDVC-31-1-1-86

Ocean Surveys., Inc.

1. PROJECT

2. HOLE NUMBER

3. DRILLING AGENCY

4. NAME OF DRILLER

 $-54.7 \pm 20.0$ 

**Boring Designation** CHDVC-32-1-1-86

DDII I ING	DRILLING LOG South Atlantic Division						INSTALLATION SHEET 1 Charleston Harbor OF 1 SHEETS								
	LUG	South Atlantic Div							OF '		IEETS				
1. PROJECT Charleston Ha	erhor Ent	rance Channel Deep						YSTEM South Carolina NAD83	VERTI	CAL <b>/ILLW</b>	,				
Onanostonina	IIDOI EIL	Tarioc Orianiioi Deep						E OF BIT	:						
2. HOLE NUMBER CHDVC-32-1-	1-86 1	CATION COORDINATES N 342519.6489 E 2	343525.607	C	OSLI	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore							
<ol><li>DRILLING AGENC Ocean Survey</li></ol>			1	12.	TOTA	AL SA	MPLE 4	ES DISTURBED 4	UNDIST	URBEI 0	)				
4. NAME OF DRILLE			1	13.	TOTA	AL NU		R CORE BOXES 0							
DMB 5. DIRECTION OF BO	ORING	: DEG FROM	: BEARING	14.	ELEV	'ATIO	N GR	ROUND WATER NA							
VERTICAL INCLINED		VERTICAL	1		DATE			8/11/86	MPLETE 8/1	D 1/86					
6. THICKNESS OF O	VERBURD	EN 20'	<u> </u>					OP OF BORING -36.4' MLLW							
7. DEPTH DRILLED I	NTO ROCK	0'	<u>L</u>					RECOVERY FOR BORING 100%  ND TITLE OF INSPECTOR							
8. TOTAL DEPTH OF	BORING	56.4'		10.		I/A	\L /\.	THE OF MOILOTON							
ELEV DEPTH 9		FIELD CLASSIFICATION (			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value				
-36.4		YEY SILT (MH), gray, w	rith shell fragments,	$\pm$		Ø									
<u> </u>	Alternat	ting layers of gray silty fi 4" to 1'.	ne sand. Layers vary	'				Start Time: 17:08							
<b>=</b>								Sotp Time: 17:09							
重															
+															
<b>基</b>															
‡						1									
<b>+</b>															
<u> </u>															
<b>=</b>															
<b>+</b>															
<u> </u>															
■ ■															
<b>=</b>						2									
<b>+</b>															
1 1															
<b>#</b>															
Ī															
<u> </u>															
-50.5 <u>+</u> 14.1															
1 111		SILTY SAND (SP-SM), co	parse; gray, with	٦		3									
1 +	shell fra	agments.													
l ‡ <b>•</b>															
-54.3 = 17.9	<b>17.9</b> ': S	SANDY CLAY (CL), gray,	with 1/2" intervals	$\dashv$											
	of medi	um sand and shell hash	every 1" to 5".												
						4									
-56.4 = 20.0	BOTTC	OM OF BOREHOLE AT -	-56.4 ft												
		Soils visually field classi Unified Soil Classification													

**Boring Designation** CHDVC-33-1-1-86

DR	ILLIN	IG I	O	G	DIVIS						STALL					SHEE		1
					So	uth Atla	ntic Di	ivision						arbor				IEETS
1. PROJE Charl		Harl	bor	Entra	ance	Channe	el Dee	pening			State	Pla	ne -	YSTEM South Carolina NA	D83	VERT	/LLW	/
														OF BIT				
	VC-33	-1-1				N COORDI 495.53		42830.79		(	OSI	Mod	el 1	er's designation of d 500 Vibracore	RILL	_		
3. DRILLI Ocea	ing age in Surv			nc.						12.	. TOT	AL SA	MPLI 4	ES DISTURE	BED 4	UNDIST	URBEI	D
4. NAME DMB	OF DRI									13.	. ТОТ	AL NU	JMBE	R CORE BOXES 0		•		
5. DIREC		F BOF	RINC	3		DEG FRO	M	BEARING	3	14.	ELE\	/ATIC	N GF	ROUND WATER NA				
	RTICAL CLINED	=			ļ	VERTICA	L 			15.	. DATI	E BOF	RING	STARTED 8/15/8		OMPLETI 8/1	ED <b>5/86</b>	
6. THICK	NESS O	F OVI	ERB	BURDE	N		20'								.4' MLLW	I		
7. DEPTH	H DRILLI	ED IN	тоі	ROCK			0'							RECOVERY FOR BORING  ND TITLE OF INSPECTOR				
8. TOTAL	DEPTH		BOR	ING		5	9.4'					N/A						
	DEPTH	LEGEND				(D	escriptio				% REC	Samp No.	RQD %	REMAR	RKS		Blows/ 0.5 ft	N-Value
-39.4	-		0':	CLAY	'EY S	ILT (MH)	black,	with organ	ics.			1		USCS				
#	- - -																	
#	-													Start Time: 16:29				
-42.6	3.2													Stop Time: 16:30				
#	-		<b>3.2</b> fra	<b>2':</b> SIL	TY CL ts, Alt	AYEY Sating 1	AND (S 1/8" to 5	C), gray, a 5" layers of	nd shell gray silty									
#	-		cla		·	· ·		•	0 , ,									
<b>±</b>	-											2	-					
#	-											_						
#	-													D	·0=	<b>TOF</b>		
#														Penetrometer - 0.25 T	SF to 1.25	ISF		
#	-																	
#	- -																	
	- -																	
#	-											3						
1	-																	
#	-																	
#	-																	
#	<u>.</u>																	
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#	- - -											4						
#	-																	
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#	- -																	
#																		
<u></u>	00.0																	
-59.4	20.0	[////	BC	OTTO	и OF	BOREHO	LE AT	-59.4 ft										]

BOTTOM OF BOREHOLE AT -59.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-34-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-34-1-1-86 : N 339591.3823 E 2341934.126 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0

13. TOTAL NUMBER CORE BOXES

14. ELEVATION GROUND WATER

16. ELEVATION TOP OF BORING

17. TOTAL CORE RECOVERY FOR BORING 100%

18. SIGNATURE AND TITLE OF INSPECTOR

15. DATE BORING

0

8/15/86

NA

-30.5' MLLW

COMPLETED

8/15/86

8. TOTAL DEPTH OF BORING 50.5 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH ELEV Samp REMARKS RQD % (Description) -30.5 0': CLAYEY SILT (ML), black, with organics. USCS 1 Start Time: 10:13:00 Stop Time: 10:13:51 -33.7 3.2 3.2': SILTY SAND (SP-SM), fine; gray. 2 3 4  $-50.5 \pm 20.0$ BOTTOM OF BOREHOLE AT -50.5 ft

4. NAME OF DRILLER

☑ VERTICAL

5. DIRECTION OF BORING

6. THICKNESS OF OVERBURDEN

7. DEPTH DRILLED INTO ROCK

DEG FROM

20'

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

0'

VERTICAL

BEARING

**DMB** 

**Boring Designation** CHDVC-35-1-1-86

DRII I ING I	DRILLING LOG South Atlantic Division						N		SHEET	T ′	1
1. PROJECT		South Atlantic Div						arbor YSTEM :	OF 1		IEETS
	rbor Ent	rance Channel Deep						South Carolina NAD83		CAL 1LLW	,
		·						OF BIT			
2. HOLE NUMBER CHDVC-35-1-1	1-86 1	OCATION COORDINATES N 339740.4255 E 23	342172.099	05	SIN	Nod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY Ocean Surveys				12. T	OTA	L SA	MPLE 4	ES DISTURBED U	UNDIST	URBED	)
4. NAME OF DRILLER				13. T	ОТА	L NU		R CORE BOXES 0			
DMB 5. DIRECTION OF BO	RING	DEG FROM	BEARING	14. El	LEV	ATIO	N GR	OUND WATER NA			
VERTICAL INCLINED		VERTICAL		15. D				8/15/86	MPLETE 8/15	D 5/86	
6. THICKNESS OF OV	/ERBURDE	EN 20'	-					P OF BORING -30.3' MLLW			
7. DEPTH DRILLED IN	NTO ROCK	( 0'	<u>L</u>					ECOVERY FOR BORING 100%  ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF I	BORING	50.3'		10. 0.		I/A	\L /				
ELEV DEPTH E		FIELD CLASSIFICATION (Description)		R	% EC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-30.3	0': SAN	IDY SAND (SM), fine, bla	ack, with 1" to 2"	+	$\dashv$	Ø				$\overline{}$	
<u> </u>	thick lay	yers of black organic clay " to 10".	ey silt occurring					Ct-+ Time: 40:40			
	0.0., =	10 10 .						Start Time: 10:49 Stop Time: 10:50		.	
	<u> </u>									.	
<b>│</b>	A									.	
<b>I</b>	A									.	
<b>│</b>										.	
<b>l</b>				+					,		
<b>│</b>	<mark>.</mark>									,	
<b>│</b>	<u> </u>									.	
-38.0 = 7.7	A									.	
# 17	7.7': SII	LTY SAND (SP-SM), gra	īy.	$\neg$						.	
										.	
İ 🗼 📈						2				.	
l 🛊 📘					-						
ļ ‡ 📑										.	
1 ‡ 1										.	
‡										.	
l 🛔 📘										.	
l ‡ 🚺										.	
-45.1 <del> </del> 14.8						3				,	
+ 17.5	<b>14.8</b> ': C	CLAYEY SAND (ML), gra	y, with 1" to 2" thick	$\dashv$	}	,					
l 📱 🔢	layers o	of coarse sand within 1" t	o 9" of each other.							.	
l 🛊 🔢										.	
i 🛊 🔢										.	
l 🛓 🔢										.	
										.	
★ ■						4				ı	
-50.3 = 20.0	BOTTO	OM OF BOREHOLE AT -	50 3 ft			•					
		Soils visually field classified Soil Classification									
			•								

Boring Designation CHDVC-36-1-1-86

								DUIII	ig Des	signation			
DRILLING L	OG	South Atlantic Di		INST/				arbor			SHE		1 IEETS
1. PROJECT		Oddin Adamic Di		9. CO	OR	DINA	TE S	YSTEM			VER	ICAL	
Charleston Harb	or Entr	ance Channel Dee							Carolina	a NAD83		MLLW	/
2. HOLE NUMBER	:100	CATION COORDINATES						OF BIT	ICNATION	N OF DRILL			
		I 340503.5828 E 2						500 Vib		VOI DIVILL			
3. DRILLING AGENCY	Ina		,	12. TO	ATC	L SA		S	DI	STURBED	UNDIS		D
Ocean Surveys., 4. NAME OF DRILLER	, inc.			13 T(	<b>ΣΤ</b> Δ	L NILI	4 IMBE	R CORE I	ROYES	0	<b>:</b>	0	
DMB								OUND W		NA			
5. DIRECTION OF BOR	ING	DEG FROM VERTICAL	BEARING						STARTE		COMPLET		
INCLINED			:	15. D/						/14/86		14/86	
6. THICKNESS OF OVE	RBURDE	N 20'	_					P OF BOI		-37.7' M			
7. DEPTH DRILLED INT	O ROCK	0'	L						OF INSPE	ORING 1009	<u>′o</u>		
8. TOTAL DEPTH OF BO	ORING	57.7'				l/A			0				
ELEV DEPTH G	I	FIELD CLASSIFICATION (Descriptio		RE	% EC	Samp No.	RQD %		F	REMARKS		Blows/ 0.5 ft	N-Value
-37.7_	<b>0'</b> : CLAY	YEY SILT (MH), gray, v	vith organics, with			1		USCS					
<u> </u>	1/16" to	1/4" thick layers of san	d every 1/2" to 3".		-	'							
<b> </b>													
<b>=</b>									me: 13:4 me: 13:4				
+									ometer -				
<b>= 11</b>													
-42.5													
± **/*/	4.8': SIL' (Cooper	TY SAND (SC-SM), fir	e; olive, calcareous			2							
	(Cooper	iviaii).			-	_							
								Penetro	ometer -	1.5 TSF			
					f	3							
					-								
***************************************													
± 45.0													
-52.7 = 15.0 <b>(*/</b> / <b>/</b> /	<b>15'</b> : CLA	YEY SANDY SILT (MI	H), olive, calcareous	$\dashv$	ŀ	_							
<b>‡</b>	(Cooper	Marl).			-	4							
<b>= 11</b>													
<b></b>													
+													
<b>基</b>													
-57.7 = 20.0													
	BOTTO	M OF BOREHOLE AT	-57.7 ft		L			I					J
	NOTE: S	Soils visually field class	ified in accordance										
	with the	Unified Soil Classificat	ion System										

**Boring Designation** CHDVC-37-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore CHDVC-37-1-1-86 : N 339719.5338 E 2342747.102 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 DMB 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 8/15/86 8/15/86 16. ELEVATION TOP OF BORING -38' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 96% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38 0': CLAYEY SILT (ML), black, with organics. Start Time: 12:32 Stop Time: 12:32 1 -41.5 ‡ 3.5 3.5': SILTY SAND (SP-SM), fine; gray, with 1" to 1/8" thick layers of clay 3" to 6" apart. Penetrometer - 1.5 TSF 2 3 -56.5  $\pm$  18.5 18.5': SILTY CLAYEY SAND (SM), fine; olive, 4 calcareous (Cooper Marl). Penetrometer - 4.0 TSF  $-58.0 \pm 20.0$ 

BOTTOM OF BOREHOLE AT -58.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-38-1-1-86
SHEET 1
OF 1 SHEETS

DRILLING L	_OG	South Atlantic Div	vicion		harl			arbor		1
1. PROJECT		South Atlantic Div	151011						OF 1 SE	HEE IS
	bor Ent	rance Channel Deep	ening					South Carolina NAD83	MLLW	/
								OF BIT		
2. HOLE NUMBER CHDVC-38-1-1		CATION COORDINATES  N 339424.5053 E 2	342570 154					ER'S DESIGNATION OF DRILL 500 Vibracore		
3. DRILLING AGENCY		1 000-12-1.0000	042070.104				MPLE	S DISTURBED U	INDISTURBE	D
Ocean Surveys 4. NAME OF DRILLER				13 7	TOTA	I NII	4 MBEE	E CORE BOXES 0	0	
DMB			•	_				OUND WATER NA		
5. DIRECTION OF BOI VERTICAL INCLINED	RING	DEG FROM VERTICAL	BEARING	15. [	DATE	BOF	RING		1PLETED 8/15/86	
6. THICKNESS OF OV	ERBURD	EN 20'	•	16. E	ELEV	ATIO	N TOI	P OF BORING -31.3' MLLW		
7. DEPTH DRILLED IN	ITO ROCK	( 0'						ECOVERY FOR BORING 98%		
8. TOTAL DEPTH OF E	BORING	51.3'		18. 8		ATUF  / <b>A</b>	RE AN	ID TITLE OF INSPECTOR		
ELEV DEPTH		FIELD CLASSIFICATION (	-	Π,	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-31.3 <u>+</u>	<b>81</b>	(Description		'	, LO	Sar	RG %	11000		ź
-31.3	0': CLA sand.	YEY SILT (ML), black, w	ith organics, and			1		USCS		
<b>+</b>								Start Time: 11:25		
<u> </u>								Stop Time: 11:25		
#										
-34.7 3.4	2 /1. 01	LTY SAND (SP-SM), fine	or gray with lancas							
#	of clay.		e, gray, with lenses							
<u> </u>										
						2				
+					-					
								Penetrometer - 1.25 TSF		
<u> </u>										
+ 1										
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<u> </u>					H	_				
1 1						3				
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-51.3 = 20.0										] <b> </b>
	BOTTC	M OF BOREHOLE AT -	51.3 ft						-	
	NOTE:	Soils visually field classi	fied in accordance							
	with the	Unified Soil Classification	on System							

Boring Designation CHDVC-39-1-1-86

				DIV (IQUON)	1	11.10	T	A TIO		Borning Designation					
DF	DRILLING LOG South Atlantic Division					INSTALLATION SHEET 1 Charleston Harbor OF 1 SHEET									
1. PRO						9. (	COOF	DINA	TE S	YSTEM	VERT	ICAL			
Cha	rleston	Har	bor Ent	rance Channel Deep	ening					South Carolina NAD83	<u>:</u> N	/ILLW			
CHE	NUMBE DVC-39	-1-1	-86 I	CATION COORDINATES N 339200.4873 E 2	342471.194	(	OSI	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore					
	LING AGE an Sur\					12.	TOT	AL SA	MPLE 3	DISTURBED 3	UNDIST	URBEI	)		
4. NAMI	OF DRII					13.	TOT	AL NU		R CORE BOXES 0					
DME 5 DIRE	3 CTION OI	F BOI	RING	DEG FROM	BEARING	14.	ELE	/ATIC	N GR	ROUND WATER NA					
l ⊠ v	ERTICAL ICLINED		· · · · · · · · · · · · · · · · · · ·	VERTICAL	: DEFINATION	15.	DATI	BOF	RING	STARTED CC 8/15/86	OMPLETE 8/1	ED 5/86			
6. THIC	KNESS O	F OV	ERBURD	EN 18.4'	•	16.	ELE	/ATIC	N TO	P OF BORING -27.7' MLLW					
7. DEP1	H DRILLE	ED IN	ITO ROCK	( 0'						RECOVERY FOR BORING 92%					
8. TOT <i>A</i>	L DEPTH	I OF I	BORING	46.1'		18.		IATU⊦ <b>√</b> /А	RE AN	ND TITLE OF INSPECTOR					
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION (			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-27.7_	_	Ū	0': CLA	YEY SANDY SILT (MH)	black, with			S							
_			organic	S.											
=										Start Time: 11:54 Stop Time: 11:54					
	_														
=	_									Penetrometer - 0.25 TSF					
-								1							
=															
-															
-	_														
=															
-			7': At 7 occurrii	, thin 1/4" to 1/2" thick leng randomly.	nses of sand										
=															
-	_							2							
=															
=			<b>10'</b> : At	10', sand lenses occurrin	g every 1" to 4".										
-	_														
=															
=															
-															
-	-		<b>14'</b> : At	14', sand lenses are 1/4"	to 1/2" thick and			3							
-			occur fi	rom 1/4" to 3" apart.											
=															
=	<u> </u>														
] -															
=	_									Penetrometer - 0.25 TSF					
-46.1 <sup>-</sup>	18 1														
-40.1	10.4		воттс	M OF BOREHOLE AT -	46.1 ft					I			I		
			NOTE:	Soils visually field classife Unified Soil Classification	fied in accordance										

Boring Designation CHDVC-40-1-1-86

		DIVISION		INIS	STALL	۸٦١٨	NI	DOIL	ig Dcc	signatio		HEET 1	_
DRILLING L	DRILLING LOG DIVISION South Atlantic Division							arbor				= 1 sh	1 EETS
1. PROJECT Charleston Harb	or Entr	ance Channel Deep		9. (	COOR	DINA	TE S	YSTEM	Carolin	a NAD83		RTICAL MLLW	
		·	·····9	10.	SIZE	AND	TYPE	OF BIT			•		
2. HOLE NUMBER CHDVC-40-1-1-		CATION COORDINATES I 338879.474 E 23	42383 25	1					SIGNATION Pracore	OF DRILL			
3. DRILLING AGENCY	•	1 00007 0.47 4 6 20	+2000.20				MPLE			STURBED	UND	ISTURBED	
Ocean Surveys.  4. NAME OF DRILLER	, Inc.			40	<b>TOT</b>		3	2005		3		0	
DMB								CORE		0 NA			
5. DIRECTION OF BOR VERTICAL INCLINED	ING	DEG FROM VERTICAL	BEARING		DATE				STARTE		COMPL	ETED 8/15/86	
6. THICKNESS OF OVE	RRURDE		:	16.	ELEV	ATIC	N TO	P OF BO		-27.5' N		5/15/60	
7. DEPTH DRILLED INT		0'		17.	TOTA	L CC	RE R	ECOVER	RY FOR BO	DRING 83°			
8. TOTAL DEPTH OF B		44.7'		18.		ATUI <b>I/A</b>	RE AN	ID TITLE	OF INSPE	CTOR			
		FIELD CLASSIFICATION	DE MATERIAI S		%							rt /s/	alue
ELEV DEPTH		(Description	)		RÉC	Samp No.	g%		· ·	REMARKS		Blows/ 0.5 ft	N-Value
-27.5	0': CLAY 1/2" to 1 between	YEY SILT (ML), black, v " thick layers of sand w	vith organics, with th 1" to 1' of clay										
	Detween								ime: 13:0 ime: 13:0				
						1							
<b>± 11</b>												-	
<b>± 111</b>													
<b>± 11</b>													
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± <b>         </b>													
-44.7 17.2 17.2 17.2 17.2 17.2 17.2 17.2 17													
	BOTTO	M OF BOREHOLE AT -	44.7 ft										
	NOTE: S	Soils visually field classi Unified Soil Classificati	fied in accordance										
	with the	Onnieu Son Ciassincati	on System										
													- 1

**Boring Designation** CHDVC-41A-1-1-86

DRILLING LOG	DIVISION		STALI			SHEE										
	South Atlantic Division							EETS								
1. PROJECT	ntrongo Channel Decession					YSTEM VERT South Carolina NAD83	ICAL <b>/ILLW</b>									
Charleston Harbor El	ntrance Channel Deepening	$\vdash$				OF BIT	/ILLVV									
2. HOLE NUMBER : I	LOCATION COORDINATES					ER'S DESIGNATION OF DRILL										
CHDVC-41A-1-1-86	N 340579.7908 E 2344158.948	(	OSI	Mod	el 15	500 Vibracore		RBED )								
3. DRILLING AGENCY		12.	. TOT	AL SA	MPLE	•										
Ocean Surveys., Inc. 4. NAME OF DRILLER		40	TOT	A I . N.II	4	4	0									
DMB		-				R CORE BOXES 0										
5. DIRECTION OF BORING	DEG FROM BEARING	14.	. ELE	ATIC	IN GR	OUND WATER NA : COMPLETI	-D									
✓ VERTICAL     ✓ INCLINED	VERTICAL	15.	. DAT	E BOF	RING		7/86									
6. THICKNESS OF OVERBUR	IDEN 20'	16.	. ELE	/ATIC	N TO	P OF BORING -38' MLLW										
7. DEPTH DRILLED INTO RO		17.	. TOT	AL CC	RE R	ECOVERY FOR BORING 100%										
8. TOTAL DEPTH OF BORING		18.			RE AN	ID TITLE OF INSPECTOR										
	30		<u></u>	<b>√/A</b>				Φ								
ELEV DEPTH B	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	-Valu								
	AND (SM), fine; gray, with shell fragments,			ű	-											
‡ <mark> ∤ ∤</mark> Altern	nating 1" to 3" layers of gray clay and gray fin	е														
sand.						Start Time: 9:50										
<b> </b>						Stop Time: 9:51										
│ <del>┋</del> <mark>┊┆┆</mark>																
<b>1</b>																
<del> </del>																
				1												
					1											
│ <u></u> <mark>┆┼┆</mark>						Penetrometer - 0.25 TSF to 0.50 TSF										
<b>│</b>																
<u> </u>																
<u></u>																
					-											
<u> </u>				2												
<u></u> <u>†</u>																
<del> </del>																
│ ‡ <mark>!   † ! </mark> †																
<b>                                     </b>																
<del></del> <u></u>																
<u> </u>																
<b>★          </b>				3												
<del> </del>   <mark>    </mark>				<u> </u>												
<b>‡</b> • • • • • • • • • • • • • • • • • • •																
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Ĭ <mark>ŢŢŢ</mark>																
<b> </b>																
<del> </del>																
-58.0 <sup>±</sup> 20.0				4												
BOTT	FOM OF BOREHOLE AT -58.0 ft					ı										
NOTE	E: Soils visually field classified in accordance															
with the	he Unified Soil Classification System															

Boring Designation CHDVC-42-1-1-86

		DIVISION		INIC	STALL	٨ΤΙΟ	N.I.	DOIL	ig Designation			
DRILLING L	OG	South Atlantic Di	vision					arbor		SHEE	т 1 1 sні	
1. PROJECT	or Ent	rance Channel Deep		9. (	COOR	DINA	TE S	YSTEM	Carolina NAD83	VERT		
Chanesion Hair	וסו בוונו	rance Channel Deep	bening					OF BIT	Carolina NADOS	<u> </u>	/ILL V V	
2. HOLE NUMBER		CATION COORDINATES							IGNATION OF DRILL			=
CHDVC-42-1-1- 3. DRILLING AGENCY	86 : r	N 339148.5843 E 2	342984.202				ei 15 MPLE	500 Vib s	DISTURBED	UNDIST	URBED	
Ocean Surveys.	, Inc.						3		3		0	
4. NAME OF DRILLER DMB								R CORE E				
5. DIRECTION OF BOR	ING	DEG FROM VERTICAL	BEARING	14.	ELE	'ATIC	N GR	OUND W	ATER NA STARTED	COMPLETE	-D	
INCLINED		VERTICAL		15.	DATE	BOF	RING		8/15/86		5/86	
6. THICKNESS OF OVE	RBURDE	EN 17'						P OF BO				
7. DEPTH DRILLED INT	TO ROCK	0'							Y FOR BORING 86% OF INSPECTOR	<u> </u>		
8. TOTAL DEPTH OF B	ORING	47.7'		10.		I/A	VL AIV	ID IIILL	OF INOTECTOR			
ELEV DEPTH B		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-30.7_	<b>0'</b> : CLA	YEY SILT (ML), black, v	vith organics, with			0)						$\overline{}$
<u> </u>	1/16" to to 3" of	2" layers of sand appeal	aring @ 10.3' with 1"									
#									me: 14:23:30 me: 14:23:45			
												-
± <b>111</b>						1						
<b> </b>												
<u> </u>												
#								Ponetro	ometer < 0.25 TSF			
+								reneuc	Jilleter < 0.23 131			
<b>‡</b>												
<b>± 11</b>												
<u> </u>												
‡						2						
± <b>       </b>												
#												
<b> </b>												
<u> </u>												
± <b>         </b>												
+												
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<u> </u>						3						
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<b>‡</b>												
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<b>‡</b>												
<u> </u>												
<u>.                                    </u>												
-47.7 <del>  1</del> 7.0	ВОТТО	M OF BOREHOLE AT	-47.7 ft				<u> </u>					
		Soils visually field class										
		Unified Soil Classificati										

Boring Designation CHDVC-43-1-1-86

	5.0	1101011				4 TIO		borning Designation C			
DRILLING L	$\alpha$	vision South Atlantic Di			STALL Char			arbor	SHEET OF 1		
1. PROJECT	<u>'</u>		!	9. (	COOR	DINA	TE S	YSTEM :	VERTIC	CAL	
Charleston Hark	or Entran	ce Channel Deep						South Carolina NAD83	M	LLW	
2. HOLE NUMBER		TION COORDINATES						ER'S DESIGNATION OF DRILL			
CHDVC-43-1-1-	86 N 3	38846.5853 E 2						500 Vibracore			
<ol><li>DRILLING AGENCY Ocean Surveys.</li></ol>	., Inc.			12.	1017	AL SA	MPLE 3	S DISTURBED U	JNDIST	0 JKRED	'
4. NAME OF DRILLER	•			13.	TOTA	L NU	JMBEI	R CORE BOXES 0			
DMB 5. DIRECTION OF BOR	RING	: DEG FROM	BEARING	14.	ELEV	ATIC	N GR	OUND WATER NA			
		VERTICAL		15.	DATE	ВОР	RING	STARTED COM 8/15/86	1916TE 8/15		
6. THICKNESS OF OVE	ERBURDEN	16.5'	i	16.	ELEV	ATIC	N TO	P OF BORING -28.4' MLLW	0, 10	,,,,,	
7. DEPTH DRILLED IN	TO ROCK	0'	L					ECOVERY FOR BORING 82%			
8. TOTAL DEPTH OF B	ORING	44.9'		18.		atuf <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR			
ELEV DEPTH 5	FIE	LD CLASSIFICATION			% REC	Samp No.	۵.	REMARKS		Blows/ 0.5 ft	N-Value
-28.4 <sub>—</sub>	0': CLAYE	(Description Y SILT (ML), black, v			REC	San	RQD %	-		<u>≅</u> o	ź
		nick lenses of sand o	occurring within 1/4" to	0							
‡								Start Time: 15:27:45 Stop Time: 15:27:59			
± <b>       </b>						1		·			
‡											
<b>‡</b>											
<b>基</b>								Penetrometer25 TSF			
‡											
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<b>‡</b>											
						2					
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						3					
<b>‡</b>											
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<b>+</b>											
<u></u>											
Ī											
<b>‡</b>											
-44.9 <sup>‡</sup> 16.5	воттом с	OF BOREHOLE AT	-44.9 ft								
		ls visually field class									
	with the Un	ified Soil Classificat	ion System								

Boring Designation CHDVC-44-1-1-86
INSTALLATION SHEET 1
OF 1 SHEETS
9. COORDINATE SYSTEM VERTICAL

DRILLING L	-OG   S	outh Atlantic Division		Char	lesto	on Ha	arbor	of 1	SHI	EETS
1. PROJECT	•						YSTEM	VERTIC		
Charleston Har	bor Entranc	e Channel Deepening					South Carolina NAD83	<u> </u>	LLW	
2. HOLE NUMBER	· LOCATI	ON COORDINATES					OF BIT  ER'S DESIGNATION OF DRILL			
CHDVC-44-1-1		8878.6551 E 2343345.249					500 Vibracore			
3. DRILLING AGENCY	, .			. TOTA		MPLE	S DISTURBED	UNDIST		)
Ocean Surveys 4. NAME OF DRILLER				TOT		3	3 :		0	
DMB			_				R CORE BOXES 0			
5. DIRECTION OF BOI	RING	DEG FROM BEARING VERTICAL	14	. ELEV	ATIC	IN GR	OUND WATER NA : CO	MPLETE	D	
INCLINED			15	. DATE	BOF	RING	8/17/86	8/17		
6. THICKNESS OF OV	ERBURDEN	18.5'	16	. ELE\	'ATIC	N TOI	P OF BORING -28.5' MLLW			
7. DEPTH DRILLED IN	ITO ROCK	0'					ECOVERY FOR BORING 92%			
8. TOTAL DEPTH OF E	BORING	47'	18		atuf <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR			
									70.11	
ELEV DEPTH GENT		D CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-28.5	0': SILTY CL	AY (MH), black, with organics, wit ck layers of sand from 1/2" to 1" ap	:h hart							
≢ ■	1/4 10 1 11110	ck layers of sally from 1/2 to 1 ap	Jail.							
± III							Start Time: 10:37:05 Stop Time: 10:37:14			
#							Ctop Times Toler I I			
<b>‡</b>							Penetrometer < 0.25 TSF			
+ 11							Felletionietei < 0.25 13i			
‡									}	
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± <b>III</b>									ł	
<b>+ II</b>										
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± ■										
<u> </u>										
<b>王</b>										
‡										
+										
-47.0 <sup>‡</sup> 18.5	BOTTOM OF	F BOREHOLE AT -47.0 ft								
	NOTE: Soils	visually field classified in accorda	nce							
	with the Unif	ied Soil Classification System								

DIVISION

Boring Designation CHDVC-45-1-1-86

DBILLIN	DRILLING LOG  DIVISION South Atlantic Division							INSTALLATION SHEET 1									
	G L	.OG	South Atlantic D	ivision	Charleston Harbor OF 1 SHEETS  9. COORDINATE SYSTEM : VERTICAL												
1. PROJECT									YSTEM South Carolina NAD83	VERTI	CAL <b>1LLW</b>	,					
		bor Enti	ance Channel Dee	epening	_				OF BIT	: IV	ILLVV						
2. HOLE NUMBER CHDVC-45-			CATION COORDINATES 339472.8353 E						ER'S DESIGNATION OF DRILL 500 Vibracore								
<ol><li>3. DRILLING AGE Ocean Surv</li></ol>					12.	TOT	AL SA	MPLE 3	S DISTURBED 3	UNDIST	URBEI	)					
4. NAME OF DRIL					-				R CORE BOXES 0								
5. DIRECTION OF VERTICAL	BOI	RING	DEG FROM VERTICAL	BEARING					OUND WATER NA	MPLETE	D						
☐ INCLINED						DATI			8/17/86		7/86						
6. THICKNESS OF					_				P OF BORING -38.4' MLLW RECOVERY FOR BORING 87%								
7. DEPTH DRILLE					_	SIGN	IATUI		ND TITLE OF INSPECTOR								
8. TOTAL DEPTH			55.9'				<b>√</b> /A				t o⁄	e					
ELEV DEPTH	LEGEND		FIELD CLASSIFICATION (Description	-		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value					
-38.4		0': CLA' organics	YEY SILT (ML), black,	with sand, and													
‡		3							Start Time: 10:13								
‡									Stop Time: 10:14								
Ŧ																	
1							1										
<u> </u>								-									
-42.8 <del>+</del> 4.4	Ш																
		<b>4.4'</b> : SIL	TY SAND (SM), fine;	gray.													
<b>l</b>																	
1 ± 1																	
1 ±																	
1 = [																	
l	+						2										
l								-									
1 ±																	
1 ± 1																	
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1 =																	
1 +																	
-52.3 + 13.9					_												
=		13.9': S	ILTY SAND (SP-SM), ell fragments.	fine to medium; gray	,		3										
‡								-									
‡																	
1 ±																	
‡																	
-55.9 <del>-</del> 17.5																	
55.5 <del>+</del> 17.6		вотто	M OF BOREHOLE AT	-55.9 ft					1			ı					
		NOTE:	Soils visually field clas	sified in accordance													
		with the	Unified Soil Classifica	tion System													

Boring Designation CHDVC-46-1-1-86

									V U-4	<u> </u>
DRILLING LOC	_	VISION South Atlantic Div	vision		STALL			arbor SHE		1 EETS
1. PROJECT		South Atlantic Div	/131011	9. (	COOR	DINA	TE S\	STEM VER	TICAL	
Charleston Harbor	Entran	ce Channel Deep	ening					South Carolina NAD83	MLLW	'
2. HOLE NUMBER	: LOCA	TION COORDINATES						OF BIT  R'S DESIGNATION OF DRILL		
CHDVC-46-1-1-86		39612.4491 E 2	347571.113		I ISC	Mod	el 15	00 Vibracore		
3. DRILLING AGENCY Ocean Surveys., In	nc			12.	TOTA	L SA	MPLE 4	S DISTURBED UNDIS	TURBEI	
4. NAME OF DRILLER	10.			13.	TOTA	L NU	•	R CORE BOXES 0		
DMB 5. DIRECTION OF BORING		: DEG FROM	BEARING	14.	ELEV	'ATIO	N GR	OUND WATER NA		
5. DIRECTION OF BORING VERTICAL INCLINED	J	VERTICAL	BEARING	15.	DATE	BOF	RING		TED 17/86	
6. THICKNESS OF OVERB	BURDEN	20'						P OF BORING -40.5' MLLW		
7. DEPTH DRILLED INTO R	ROCK	0'						ECOVERY FOR BORING 100%  D TITLE OF INSPECTOR		
8. TOTAL DEPTH OF BORI	ING	60.5'		10.		I/A	VL AIN	D ITTLE OF INOT ECTOR		
ELEV DEPTH E	FIE	ELD CLASSIFICATION ( (Description			% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-40.5 <b>      0':</b>		Y SILTY SAND (SC-				ი 1		USCS		
<del>   </del>	own, with	n shell fragments, pho ooper Marl.	osphate nodules an	d		1		Chart Times 00:40		
		oopo:a						Start Time: 09:19 Stop Time: 09:22		
‡ <mark>       </mark>								Penetrometer - 0.25 TSF		
<b>│</b>										
						2				
<b> </b>										
								Penetrometer - 1.0 TSF		
Ĭ Į <mark>∤┆</mark>								Tonouromotor Tio Ton		
<u> </u>										
						2				
						3				
<del>Ĭ</del>										
-53.0 12.5	<b>=</b> . 0=									
	ooper M	Y SAND (SM), fine; of arl).	olive, calcareous					Penetrometer - 1.5 TSF		
<mark>⋛</mark>										
<b>│</b>						4				
<b>│</b>										
-60.5 <sup>±</sup> 20.0										
	OTTOM (	OF BOREHOLE AT -	60.5 ft							
NO	DTE: Soi	Is visually field classi	fied in accordance							
with	th the Ur	nified Soil Classificati	on System							

Boring Designation CHDVC-48-1-1-86

			DIVISION	INIC	STALL	٨ΤΙΟ	NI	Borning Designation	SHEE		
DRILLING	L	OG	South Atlantic Division					arbor	<b>I</b>	т <i>^</i> 1 sн	
1. PROJECT				9. (	COOR	DINA	TE S	YSTEM	VERTI	CAL	
⊢ Charleston Ha ∣	arbo	or Entr	ance Channel Deepening	_				South Carolina NAD83	<u>:</u> IV	1LLW	
2. HOLE NUMBER			CATION COORDINATES	11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL			
CHDVC-48-1- 3. DRILLING AGENC		86 : N	N 338342.5975 E 2348280.341					500 Vibracore	LINDICT	LIDDE	$\longrightarrow$
Ocean Survey		Inc.		12.	TOT	AL SA	3	DISTURBED 3	UNDIST	0	'l
4. NAME OF DRILLE				13.	TOT	AL NU	JMBE	R CORE BOXES 0	-		
5. DIRECTION OF B	ORI	NG	: DEG FROM : BEARING	14.	ELE\	/ATIC	N GR	ROUND WATER NA			
			VERTICAL		DATE			9/16/86		ED 6/86	
6. THICKNESS OF C	OVE	RBURDE	in 17.5'	-				P OF BORING -41.2' MLLW RECOVERY FOR BORING 100%	<u>/</u>		
7. DEPTH DRILLED	INT	O ROCK	0'					ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF		RING	58.7'			I/A					
ELEV DEPTH		I	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-41.2			YEY SANDY SILT (ML), dark olive,								
<u> </u>		Cooper	ous, with hard layers of silt in the first 2' Marl).					Start Time: 12:59			
<u> </u>								Stop Time: 13:17			
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<b>I</b>						2					
<b>±</b>											
<u> </u>											
<b>#</b>											
Ī											
± <b>II</b>								Penetrometer - 1.75 TSF			
1 1						3					
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<u> </u>											
<u> </u>											
‡											
<b>I</b>											
-58.7 ± 17.5											
	F	BOTTO	M OF BOREHOLE AT -58.7 ft								
	1	NOTE: S with the	Soils visually field classified in accordance Unified Soil Classification System								

Boring Designation CHDVC-48A-1-2-86

								boring bes	ngnauon		U-40	<u> </u>						
DRILLING L		DIVISION		ı	STALL					SHEE	Τ .	1						
DRILLING L	OG	South Atlantic Di	vision	(	Char	lesto	on Ha	arbor		OF	1 sh	EETS						
1. PROJECT								/STEM		: VERTI								
Charleston Harb	or Entrai	nce Channel Deep	pening		State	Pla	ne -	South Carolina	a NAD83	N	1LLW							
				10.	SIZE	AND	TYPE	OF BIT										
2. HOLE NUMBER		ATION COORDINATES						R'S DESIGNATION	OF DRILL									
CHDVC-48A-1-2	2-86 N 3	338342.5975 E 2	2348280.341	(	osi i	Mod	el 15	500 Vibracore										
3. DRILLING AGENCY				12.	TOTA	L SA	MPLE	S DI	STURBED	UNDIST	URBE							
Ocean Surveys.	, Inc.						2	<u>:</u>	2		0							
4. NAME OF DRILLER				13.	TOTA	L NU	MBEF	R CORE BOXES	0									
DMB				14.	ELEV	'ATIO	N GR	OUND WATER	NA									
5. DIRECTION OF BOR VERTICAL	ING	: DEG FROM : VERTICAL	BEARING					STARTE		COMPLETE	D							
INCLINED		:	:	15.	DATE	BOF	RING	• -		•								
6. THICKNESS OF OVE	DBIIDDEN	9.1'	•	16. ELEVATION TOP OF BORING -52.2' MLLW  17. TOTAL CORE RECOVERY FOR BORING 100%														
				17	TOTA	1 00	DE D	ECOVERY FOR BO	NA TED									
7. DEPTH DRILLED INT	O ROCK	0'						ID TITLE OF INSPE		<u> </u>								
8. TOTAL DEPTH OF B							VE AIN	ID TITLE OF INOT E	OTOK									
				l		I/A _ <u>o</u>					70	ē						
ELEV DEPTH 8	FI	ELD CLASSIFICATION			% REC	Samp No.	ا ۾ ا	F	REMARKS		ows 5 ft	/alr						
		(Description	n)		KEC	San	RQD %				<u> </u>	ź						
	marl.	EY SANDY SILT (ML)				1		Start Time: 1636 Stop Time: 172										
-61.3— 9.1						2		Penetrometer - 2	2.0 TSF									

BOTTOM OF BOREHOLE AT -61.3 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHR-1-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHR-1-88 N 348880.4587 E 2332185.588 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/3/88 10/3/88 16. ELEVATION TOP OF BORING -37.1' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.1 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -37.1-0': CLAYEY SAND (SC), fine to coarse; dark gray, USCS with shell fragments, slightly calcareous. 3 1 -41.6 4.5 4.5': SILTY SAND (SM), fine to medium; greenish gray, with rock fragments, and shell fragments. -43.1 6.0 6': No Recovery 4 2 12 9 -46.1 9.0 **9':** CLAY (CH), high plasticity; dark gray, high plasticity, with sand, and shell fragments. 3 4 4 4 -52.1 🕇 15.0 15': Fishtailed NOTE: Fishtailed from 52.1' to 56.6' 0  $-56.6 \pm 19.5$ 19.5': SILTY CLAY (CL), low plasticity; olive green, low plasticity, calcareous. 5 18 -58.1  $\mp$  21.0 BOTTOM OF BOREHOLE AT -58.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CHR-2-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHR-2-89 N 348657.3655 E 2330884.137 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/12/89 4/12/89 INCLINED 16. ELEVATION TOP OF BORING -38.2' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.2 0': CLAY (CH), high plasticity; dark gray to black, USCS high plasticity, slightly calcareous. 1 0 -44.9 6.7 6.7': CLAYEY SAND (SC), fine to medium; tannish 2 15 gray, with shell fragments, calcareous. Began using Zeogel drilling mud. 3 22 -47.2<sup>+</sup> 9.0 9': SILTY CLAY (CL), low plasticity; light greenish brown, low plasticity, some sand, calcareous. 4 16 20 12': Some sand. 5 17 37 6 57 -54.7 16.5 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CHR-3-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHR-3-90 N 349260.3965 E 2331876.527 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/21/90 1/21/90 INCLINED 16. ELEVATION TOP OF BORING -40.2' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.2 0': CLAYEY SILT (MH), dark gray, wet, trace sand, USCS and shell fragments. 1 0 -43.2 干 3.0 3': CLAY (CH), high plasticity; dark gray, moist, high plasticity, trace sand, and shell fragments. 2 5 6': Some sand, and shell fragments. 3 5 -47.7 7.5 7.5': SC CLAYEY SAND (SC), medium to coarse; 4 3 dark gray, wet, some shell fragments. -48.8 \mp 8.6 8.6': CLAY (CL), low plasticity; olive green, moist, 5 low plasticity, some sand, calcareous. 6 14 10.5': Slightly damp. 7 19

BOTTOM OF BOREHOLE AT -55.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-55.2 = 15.0

8

9

20

25

**Boring Designation** CHR-4-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 349100.4972 E 2332415.549 CHR-4-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/22/90 1/22/90 16. ELEVATION TOP OF BORING -40.3' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.3\_ 0': SILTY SAND (SM), fine to medium; dark gray, USCS wet, some shell fragments, trace clay. 1 9 1.5': SAND, medium to coarse. Began using Zeogel drilling mud at 2 12 3': With shell fragments. 3 11 -46.3 6.0 6': CLAY (CH), high plasticity; dark gray, high plasticity, trace sand, slightly calcareous. 4 4 5 4 6 1 13.5': Trace gravel. 7 1 -55.1 <del>+</del> 14.8 14.8': CLAYEY SAND (SC), fine; olive green, moist, 8 BLOWS PER FOOT: Number required calcareous. to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -55.3 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHR-5-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 347756.593 E 2332827.7706 CHR-5-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Army Corps of Engineers - Wilmington District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 D.S. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 1/21/90 1/21/90 INCLINED 16. ELEVATION TOP OF BORING -40.1' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp **REMARKS** RQD % REC (Description) -40.1\_ 0': CLAYEY FINE SAND (SC), dark gray, wet, some USCSSet 6" casing to 46.4' by own shell fragments, calcareous. weight 100 1 0 -41.6 1.5 Weight of rods drove splitspoon from 1.5': FAT CLAY (CH), dark gray, moist, trace shell 40.1' to 43.2', cont'd drive to 44.6 fragments. 100 2 3 4.5': No shell fragments. Weight of rods drove splitspoon from 44.6' to 46.7', cont'd drive to 47.6'. 100 3 6 Weight of rods drove splitspoon from 47.6' to 49.8', cont'd drive to 50.6' 100 4 4 10.5': Trace fine sand. 100 5 0 100 0 6 13.0 13': LEAN CLAY (CL), olive green, moist, some fine Weight of rods drove splitspoon from 100 7 3 -53.6 13.5 50.6 to 52.1 sand, calcareous. 13.5': FINE SAND (SC), olive green, moist, calcareous. 100 8 16 <u>-55.1 +</u> 15.0 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CHR-6-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHR-6-94 N 347475.5233 E 2333069.277 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/7/94 8/7/94 16. ELEVATION TOP OF BORING -26.4' MLLW 6. THICKNESS OF OVERBURDEN 22.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -26.4 0': CLAYEY SILT (MH), dark gray to black. USCS 1 0 -29.7 3.3 3.3': SILTY SAND (SM), fine to medium; dark gray, 2 0 some shell fragments, and clay. -31.0 4.6 4.6': CLAY (CH), high plasticity; gray, high plasticity, trace sand. 3 0 0 4 0 0 5 0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -49.2 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** CR-CH-1-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Athena Technologies Vibracore System 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-CH-1-94 N 341505.375 E 2343166.273 N/A 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **GWC** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/19/94 8/19/94 16. ELEVATION TOP OF BORING -40.65' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING 69% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.65 N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32 0': SILTY SAND (SM), fine; green to gray, wet, and shell fragments. *-*43.7≢ 3.0 3': FAT CLAY (CH), green to gray, moist, little shell fragments, trace fine sand. *-*45.7≢ 5.0 5': SILT (ML), gray, moist, trace fine sand, no shell 69 <u>-50.7</u> 10.0 10': SILT (OL), gray, with organics, no shell fragments, "ancient marsh deposit". -53.7‡ 13.0 BOTTOM OF BOREHOLE AT -53.7 ft

**Boring Designation** CR-CH-2-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Athena Technologies Vibracore System 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-CH-2-94 N 341480.377 E 2338086.741 N/A 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **GWC** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/22/94 8/22/94 16. ELEVATION TOP OF BORING -26' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp REMARKS RQD % REC (Description) -26 0': SANDY SILT (ML), gray, and shell fragments. -29.0 = 3.0 3': SILTY SAND (SM), medium to coarse; gray, and shell fragments, organic odor. -33.0∓ 7.0 7': CLAYEY SILTY SAND (SM), fine; black, with organics, and shell fragments. 10': CLAYEY SILTY SAND (SM), fine; black, with organics, trace shell fragments, some silt strata or lenses. -46.0<sup>±</sup> 20.0 20': SILTY SAND (SM), gray, trace shell fragments. -53.0 27.0 BOTTOM OF BOREHOLE AT -46.0 ft

**Boring Designation** CR-CH-3-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Athena Technologies Vibracore System 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-CH-3-94 N 347498.116 E 2332884.34 N/A 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **GWC** 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 8/22/94 8/22/94 16. ELEVATION TOP OF BORING -36' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 48' N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36 0': SILTY SAND (SM), gray, with shell fragments, and shells, trace fine sand. -4<u>6.0</u> <u>10.0</u> 10': SILTY SAND (SM), gray, with shell fragments. -48.0 = 12.0 BOTTOM OF BOREHOLE AT -48.0 ft

**Boring Designation** CR-CH-4-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Athena Technologies Vibracore System 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-CH-4-94 N 353477.982 E 2332863.359 N/A 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **WJS** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/21/94 8/21/94 16. ELEVATION TOP OF BORING -33' MLLW 6. THICKNESS OF OVERBURDEN 16 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49 N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33 0': SILTY CLAYEY SAND (SM), fine to medium; and shell fragments, trace shells, little wood, mixed mud and sand. -36.0 = 3.0 3': SILTY CLAYEY FINE SAND (SM), no shell fragments. -39.0 6.0 6': POORLY GRADED FINE SAND (SP-SM), with silt, no shell fragments. -45.0<sup>±</sup> 12.0 12': POORLY GRADED SAND (SP), fine to medium; no shell fragments, no silt. -49.0<sup>±</sup> 16.0 BOTTOM OF BOREHOLE AT -49.0 ft

**Boring Designation** CTB-100-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 350125.4341 E 2332158.38 CTB-100-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 16. ELEVATION TOP OF BORING -38.3' MLLW 7' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45.3 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -38.3\_ 0': CLAY (CH), high plasticity; greenish gray, moist, USCS high plasticity, trace sand, and shells, slightly 0

2

3

BOTTOM OF BOREHOLE AT -45.3 ft

3.5': No sand or shells.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

0

9

<u>-45.3</u> +

7.0

**Boring Designation** CTB-100A-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-100A-88 N 350129.4318 E 2332146.379 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 9/14/88 9/14/88 16. ELEVATION TOP OF BORING -36.9' MLLW 6. THICKNESS OF OVERBURDEN 13.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.9\_ 0': Fishtailed NOTE: Fishtailed 36.9' to 45.0' -45.0-8.1 8.1': CLAY (CH), high plasticity; greenish gray, wet, high plasticity, trace sand, slightly calcareous. 1 0 11.1': Trace sand. 2 1 -50.5 BOTTOM OF BOREHOLE AT -50.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** CTB-101-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-101-88 N 350684.3825 E 2331925.289 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/8/88 9/8/88 INCLINED 16. ELEVATION TOP OF BORING -37.8' MLLW 6. THICKNESS OF OVERBURDEN 12.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -37.8\_ 0': CLAY (CH), high plasticity; greenish gray, wet, USCS high plasticity, trace shells, and sand. 0 1 5.1': No sand or shells. 2 1 6.6': With organics, and sand. 3 3 8.1': Trace sand, and organics. 4 0 9.6': Some sand, no organics. 5 2 -48.9 11.1 11.1': CLAYEY SAND (SC), fine to medium; greenish gray, wet, slightly calcareous. 6 4 <u>-50.4  $\pm$  12.6</u> BOTTOM OF BOREHOLE AT -50.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-102-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-102-88 N 350584.3204 E 2331575.309 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/13/88 9/13/88 16. ELEVATION TOP OF BORING -29.5' MLLW 6. THICKNESS OF OVERBURDEN 22' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.5 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -29.5-0': CLAY (CH), high plasticity; greenish gray, wet, USCS high plasticity, some sand, trace shell fragments, slightly calcareous. 0 1 5.2': Trace sand, and shells. 2 8.2': Small shells. 3 2 12.7': Moist, no sand or shells. 4 6 0 2 19.2': Trace sand, and shell fragments. 5 0 -51.5  $\mp$  22.0 BOTTOM OF BOREHOLE AT -51.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-103-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 351140.3334 E 2331697.215 CTB-103-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 9/13/88 9/13/88 16. ELEVATION TOP OF BORING -26.9' MLLW 6. THICKNESS OF OVERBURDEN 24.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -26.9 0': CLAY (CH), high plasticity; greenish gray, moist, USCS high plasticity, trace sand, and shell fragments, slightly calcareous. 0 1 6': Trace sand, and shell fragments. 9': Wet. 2 3 2 3 21': Some sand, trace shell fragments. 0 3 0 3 4 -51.8 🗮 24.9 BOTTOM OF BOREHOLE AT -51.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-104-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-104-88 N 351148.2647 E 2331320.218 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 9/13/88 9/13/88 -25.2' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 25.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -25.2 0': CLAY (CH), high plasticity; greenish gray, wet, USCS high plasticity, trace sand, and shell fragments, slightly calcareous. 0 1 9.8': Moist, no sand or shells. 9 2 11.3': Trace sand. 0 0 11 3 18 0 5 0 3 23.3': Trace sand. 0 4 1 0 -50.9  $\pm$  25.7 BOTTOM OF BOREHOLE AT -50.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-105-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 351632.2927 E 2331519.135 CTB-105-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/13/88 9/13/88 16. ELEVATION TOP OF BORING -23.3' MLLW 6. THICKNESS OF OVERBURDEN 27' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -23.3 0': CLAY (CH), high plasticity; greenish gray, wet, USCS high plasticity, trace sand, and shell fragments, slightly calcareous. 0 1 3': No sand or shells. 0 0 2 4 2 6 0 0 12': Trace sand. 1 3 3 4 0 1 5 6 0 0 6 6 4 21': Moist, trace sand, and shells. 0 11 10 5 21 24': Some sand, and shell fragments. 7 -48.8<sup>±</sup> 25.5 25.5': CLAYEY SAND (SC), fine to medium; 6 58 greenish gray, wet, some shell fragments. -50.3  $\pm$  27.0 BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-106-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL N 351702.2212 E 2331132.128 CTB-106-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 9/10/88 9/10/88 INCLINED 16. ELEVATION TOP OF BORING -20.5' MLLW 6. THICKNESS OF OVERBURDEN 30' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp **REMARKS** RQD % REC (Description) -20.5= 0': CLAYEY SAND (SC), fine; greenish gray, wet, USCS 1 3 -22.0 1.5 trace shell fragments, calcareous. 1.5': CLAY (CH), high plasticity; greenish gray, wet, high plasticity, trace sand, and shell fragments. 2 0 4.5': SAND, fine to medium; and shell fragments. 0 7.5': Trace sand, slightly calcareous. 3 2 12': No sand. 4 3 15': Trace sand. 1 18': Trace sand. No recovery 49.0' to 50.5' 5 2 5 -45.0 = 24.5 24.5': ORGANIC SILT (OL), dark grayish brown, wet, trace clay, and wood, non-calcareous. 6 14 **-47.5 = 27.0** 27': CLAYEY SAND (SC), medium to coarse; 7 25 greenish gray, wet, some shell fragments.  $-49.0 \pm 28.5$ **28.5**': No recovery. 3 <u>-50.5</u> 30.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.5 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CTB-107-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-107-88 N 351768.1414 E 2330699.122 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 9/10/88 9/10/88 INCLINED 16. ELEVATION TOP OF BORING -24.3' MLLW 6. THICKNESS OF OVERBURDEN 26.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp **REMARKS** RQD % REC (Description) -24.3 0': CLAYEY SAND (SC), fine to medium; greenish USCS gray, wet, trace shell fragments, slightly calcareous. 0 1 2.6': Some shell fragments, trace organics. 4 4.1': With shell fragments, and clay, calcareous. 0 5.6': Some shell fragments. 2 5 -31.4 7.1': CLAY (CH), high plasticity; greenish gray, moist, high plasticity, trace sand, and shell 3 1 fragments, slightly calcareous. 1 5 4 4 3 1 4 5 5 -46.4 22.1 22.1': CLAYEY SAND (SC), fine to medium; 6 3 greenish gray, wet, trace shell fragments, calcareous. 4 7 3  $-50.9 \pm 26.6$ BOTTOM OF BOREHOLE AT -50.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-108-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-108-88 N 351281.1846 E 2330891.201 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/14/88 9/14/88 16. ELEVATION TOP OF BORING -26.8' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.8 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -26.8 0': CLAY (CH), high plasticity; greenish gray, wet, USCS high plasticity, trace sand, and shell fragments, slightly calcareous. 3 1 0 2 3 12': No sand or shells.. 1 5 15': Trace shell fragments. 3 3 18': No shells. 0 3 0 -49.3 22.5 22.5': CLAYEY SAND (SC), fine to medium; 4 13 greenish gray, wet, trace shell fragments, slightly  $-50.8 \pm 24.0$ calcareous. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.8 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CTB-109-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-109-89 N 350115.6021 E 2332036.8827 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/24/89 2/24/89 16. ELEVATION TOP OF BORING -35.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 Matthew Delano, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.9\_ USCSNOTE: Set 6" casing to bottom of harbor. Mixed Zeogel drilling mud. 0': SILTY SAND (SM), fine to medium; gray, little clay, and shells. Wieight of tools pushed sampler from 35.9' to 39.9', from 44.4' to 45.7'. 1 7 <u>-41.</u>4 -5.5 5.5': FAT CLAY (CH), gray, trace sand, high NOTE: At 45.7' sampler was set, driven plasticity. initially to 0.5', then sank to 50.9' after 4 2 11 hammer blows. 7': No sand. 9 3 4 -50.9<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -50.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** CTB-110-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CTB-110-89 N 350385.1987 E 2332207.236 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/25/89 2/25/89 -36.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 14.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.3 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.5\_ 0': SANDY CLAY (Cj), high plasticity; dark gray, USCS high plasticity, trace shells. Mixed Zeogel drilling mud. 1 11 4.4': Trace sand, and mica. 2 6 3 14 -51.3 + 14.8 BOTTOM OF BOREHOLE AT -51.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DI-38-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES DI-38-88 N 360342.8943 E 2330257.705 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/29/88 2/29/88 INCLINED 16. ELEVATION TOP OF BORING -39' MLLW 6. THICKNESS OF OVERBURDEN 11.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -39 0': SILT (MH), black. USCS 0 1 5.2 -44.2-5.2': SAND (SP), fine; gray, Poorly Graded, with silt, calcareous. 2 10 -45.7 6.7 6.7': SILT (MH), black. 3 1 -47.2 8.2 8.2': CLAYEY SAND (SC), fine; gray, with shell fragments. 4 4 -48.7 9.7 9.7': CLAY (CH), high plasticity; green, high plasticity, with sand, calcareous. 5 12 -50.2 BOTTOM OF BOREHOLE AT -50.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DI-39-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 359128.0124 E 2331225.033 DI-39-94 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/22/94 8/22/94 -22.2' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 34.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -22.2= 0': CLAY (CH), high plasticity; gray, high plasticity, USCS trace quartz, and shell fragments. 1 0 2 0 3 0  $-45.9 \pm 23.7$ 23.7': CLAYEY SAND (SC), fine to medium; gray, some silt, trace shell fragments. 3 4 Began using saltwater drilling mud **-50.4**<sup>∓</sup>28.2 28.2': SAND (SP), fine to medium; gray, Poorly Graded, trace shell fragments. 5 20 30.8': No shells. 23 6 <u>-56.4</u> <u>34.2</u> BOTTOM OF BOREHOLE AT -56.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DI-40-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 359942.2548 E 2330417.75 DI-40-94 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/20/94 8/20/94 16. ELEVATION TOP OF BORING -45.9' MLLW 6. THICKNESS OF OVERBURDEN 12.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.9\_ 0': CLAY (CH), high plasticity; dark gray to black, USCS high plasticity, trace sand. 0 -50.4 4.5 4.5': SANDY CLAY (CL), low plasticity; fine; olive gray, low plasticity, calcareous. 2 8 6.5': CLAY, low plasticity; olive gray, low plasticity, trace sand, calcareous. 3 17 -55.4  $\mp$ 9.5 9.5': CLAYEY SAND (SC), fine; olive gray, calcareous. 4 15 5 15 -58.4 12.5 BOTTOM OF BOREHOLE AT -58.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DI-41-95 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES DI-41-95 N 359592.811 E 2330259.929 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/12/95 9/12/95 16. ELEVATION TOP OF BORING -46.4' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.4\_ USCS 0': CLAY (CH), high plasticity; gray, high plasticity, trace shale fragments, and wood. 0 1 3.8': No wood. 2 0 3 0

4

5

BOTTOM OF BOREHOLE AT -55.4 ft

plasticity, trace sand.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

8.2': CLAY (CL), low plasticity; olive gray, low

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-54.6

-55.4

- 8.2

9.0

12

**Boring Designation** DI-42-95 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 360214.8801 E 2331267.108 DI-42-95 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 26 26 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/13/95 9/13/95 16. ELEVATION TOP OF BORING -10.4' MLLW 6. THICKNESS OF OVERBURDEN 45.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -10.4 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, trace shell fragments. 1 0 -13.7<del>++</del> 3.3 3.3': SILTY SAND (SM), fine to medium; dark gray, 2 10 trace shell fragments. 3 9 No sample recovered on first drive from 6.3' to 7.8'. Re-drove to 7.8', then continued drive to 9.3'. 4 15 **-19.7** <del>-</del> 9.3 9.3': SAND (SP), fine to medium; gray, Poorly 5 9 Graded, trace silt, and shell fragments. 6 13 7 11 8 17 9 13  $-27.2 \pm 16.8$ 16.8': No recovery <u>-28.7 + 18.3</u> 18.3': SILTY SAND (SM), fine to medium; dark gray, trace shell fragments. 10 18 11 14 12 18 22.8': Trace clay. 13 20 14 22 25.8': No clay. 15 15 27.3 27.3': SAND (SP), fine to medium; gray, Poorly 16 22 Graded, trace silt, and shell fragments. 17 13

**Boring Designation** DI-42-95

	RILLING LOG (Cont Sheet)				INSTALLATION							SHEET 2		
ואטן	LING	LO	G (Cont Sneet)	C	Char	lest	on H	arbor		OF 2	2 sн	EETS		
PROJEC	T			CO	ORDI	NATE	SYS	TEM	HORIZONTAL	: VERTI	CAL			
			bor Entrance Channel Deepening		State				NAD83	i N	1LLW	1		
LOCATI	ON COO	RDIN	ATES	ELE	VAT	ION T	OP O	F BORING						
N 36	0214.8		E 2331267.108		10.4	.'								
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	F	REMARKS		Blows/ 0.5 ft	N-Value		
<b>∖-40.7</b> ≠	₹ <b>30.3</b> / = -		<b>30.3':</b> SAND (SM), fine to medium; dark gray, some clay, trace shell fragments.	;		18						14		
-43.7	33.3					19						14		
			<b>33.3':</b> CLAYEY SAND (SC), fine to medium; dark gray, trace shell fragments.			20						26		
			36.3': Dark gray to black.			21						13		
-49.7	39.3					22						6		
	_		<b>39.3':</b> CLAY (CL), low plasticity; olive gray, low plasticity.			23						15		
						24						19		
						25						21		
-55.7	45.3		POTTOM OF PORTUOI F AT . F.F. 7.4			26			OOT: Number ree			19		

BOTTOM OF BOREHOLE AT -55.7 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** DI-43-95 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DI-43-95 N 359422.9761 E 2332799.113 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/14/95 9/14/95 INCLINED 16. ELEVATION TOP OF BORING -26.1' MLLW 6. THICKNESS OF OVERBURDEN 29 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -26.1= 0': CLAYEY SILT (MH), dark gray, trace sand. USCS Used BASCO salt water drilling mud at 0.0'0 1 -35.8 9.7 9.7': CLAY (CH), high plasticity; dark gray, high plasticity, trace sand, and silt. 2 0 -39.7 = 13.6 13.6': CLAYEY SAND (SC), fine; dark gray. 3 0 <u>-42.2</u> 16.1 16.1': CLAY (CH), high plasticity; dark gray, high 4 0 plasticity, some sand. 5 0 <u>-50.6 = 24.5</u> 24.5': CLAYEY SAND (SC), fine; gray, trace shell fragments. 0 6 7 23 -55.1 1 29.0 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** DIB-2-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES DIB-2-88 N 370340.4332 E 2329071.077 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/29/88 9/29/88 16. ELEVATION TOP OF BORING -42.5' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-42.5_ - - - - -	-		<b>0':</b> SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, some sand, calcareous.		1		USCS		13
-			1.5': Trace sand, and shell fragments.						
-					2				17
-									
-	-								
-50.0	F I				3				33

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DIB-3-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 369296.4063 E 2328764.257 DIB-3-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 9/29/88 9/29/88 16. ELEVATION TOP OF BORING -43.1' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6' James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-43.5	0.4		0': CLAY (CH), high plasticity; dark gray to black, \text{wet, high plasticity, trace sand.}		1		USCS		0
- -	<u>-</u> -		<b>0.4':</b> SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, trace sand, calcareous.		2				4
-									33
-			3': Trace shell fragments.		3				21
-	-		4.5': No sand or shells.						31
-50.6	F				4				29

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BOTTOM OF BOREHOLE AT -50.6 ft

**Boring Designation** DIB-6-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-6-89 N 369504.5245 E 2329451.205 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/31/89 5/31/89 16. ELEVATION TOP OF BORING -40.1' MLLW 6. THICKNESS OF OVERBURDEN 14.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.1\_ 0': CLAYEY SILT (ML), low plasticity; olive green, USCS low plasticity, with shell fragments. 0 48 1 12 24 -45.9<sup>+</sup> 5.8 5.8': SILTY CLAY (CL), low plasticity; olive green, low plasticity, with gravel, and shell fragments, 2 18 calcareous. 22 -49.0 8.9 8.9': CLAYEY SILT (ML), olive green, with gravel, and shell fragments, calcareous. 3 16 12 16 4 15 -55.0 ‡ 14.9 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIB-8-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIB-8-90 N 370745.2171 E 2327932.041 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/10/90 2/10/90 INCLINED 16. ELEVATION TOP OF BORING -38.8' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.8 0': CLAYEY SILT (MH), dark gray to black, wet, USCS some sand, slightly calcareous. 0 1 4.2 4.2': CLAY (CL), low plasticity; olive green, wet, low 2 3 plasticity, some sand, calcareous. 3 22 4 16 20 5 9.2': Trace sand. 6 19 7 20 8 19 9 13 10 19 -55.3 = 16.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.3 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES Failing 314 **DIR-1-88** N 367560.5546 E 2329332.529 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Army Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/30/88 9/30/88 16. ELEVATION TOP OF BORING -44.1' MLLW 6' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1' James Arthur, Geologist o

ELEV	DEPTH	LEGEN	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No	RQD %	REMARKS	Blows, 0.5 ft	N-Valu
-44.1 <sub>-</sub> -44.6-	0.5		0': CLAY (CH), dark gray to black, wet.		1		USCS		0
-	<del>-</del> - - -		<b>0.5':</b> SILTY CLAY (CL), low plasticity; light greenish brown, moist, low plasticity, trace sand, calcareous.		2				2
-									26
- - - -	<del>-</del>    								28
-50.1	‡				3				18

BOTTOM OF BOREHOLE AT -50.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DIR-10-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-10-90 N 364988.5715 E 2329066.96 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/6/90 2/6/90 16. ELEVATION TOP OF BORING -36.8' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.8 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 1 <u>-46.9 = 10.1</u> 2 -47.3 10.5 10.1': SILTY SAND (SM), fine; grayish tan, wet, 3 slightly calcareous. 3 15 10.5': CLAY (CL), low plasticity; olive green, moist, low plasticity, some sand, calcareous. 4 18 5 19 18 6 7 18 -54.8<sup>‡</sup> 18.0 BOTTOM OF BOREHOLE AT -54.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-11-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-11-90 N 364861.4701 E 2328486.994 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/6/90 2/6/90 INCLINED 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace shells, and shell fragments. 0 1 -44.9 3.0 3': CLAY (CH), high plasticity; gray, moist, high plasticity, trace shell fragments. 2 0 3 5 4 0 5 9.7 -51.6 9.7': CLAY (CL), low plasticity; olive gray, moist, low 6 5 plasticity, some sand, calcareous. 7 19 8 14 -55.4 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-12-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-12-90 N 367369.4944 E 2328971.57 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/7/90 4/7/90 INCLINED 16. ELEVATION TOP OF BORING -39.1' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.1-0': CLAY (CH), high plasticity; dark gray, saturated, USCS high plasticity, some shell fragments. 0 1 -43.1 -43.6 4.0 4': CLAYEY SAND (SC), fine to medium; grayish 4.5 2 2 green, some shell fragments. 4.5': ORGANIC SILT (ML), low plasticity; olive 3 13 green, moist, low plasticity, calcareous. 4 16 5 14 6 15 7 12 12': With shell fragments. 8 16 9 15 10 16 -55.6 = 16.5 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-13-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-13-90 N 366576.5147 E 2328971.7 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Army Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/9/90 4/9/90 16. ELEVATION TOP OF BORING -42.6' MLLW 6. THICKNESS OF OVERBURDEN 12.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.6\_ 0': FAT CLAY (CH), dark gray, saturated, "soupy". USCS Weight of rods drove splitspoon from 42.6 to 48.9. Pulled tools and took Sample #1 from rods. 0 1 4.5': Wet. 0 2 -47.9 5.3': SILTY SAND (SM), fine to medium; light gray, 3 0 -48.4 · 5.8 wet, some shell fragments. 4 0 5.8': LEAN SILT (ML), olive green, moist, some shell fragments, calcareous, inorganic silt. 5 16 6 14 7 15 11': No shell fragments. 8 13 -54.9 12.3 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** DIR-14-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 362627.7195 E 2329271.963 DIR-14-97 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 9 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/21/97 6/21/97 INCLINED 16. ELEVATION TOP OF BORING -27.4' MLLW 6. THICKNESS OF OVERBURDEN 25.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.8 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp **REMARKS** RQD % REC (Description) -27.4 0': SAND (SP), fine to medium; dark gray, Poorly USCS Graded, some shell fragments, trace silt. 1 0 2.9 2.9': CLAYEY SAND (SC), fine; olive, trace shell 2 0 fragments, calcareous. -31.8 = 4.4 4.4': CLAY (CL), low plasticity; olive, low plasticity, 0 3 8 trace sand, calcareous. 0 8 4 7 21 9 6 5 6 19 7  $-42.3 \pm 14.9$ 14.9': CLAYEY SAND (SC), fine; olive, calcareous. 17 6 6 7 16 43 -46.8 19.4 15 19.4': CLAY (CL), low plasticity; olive, low plasticity, 10 8 40 trace sand, calcareous. 14 16 22.4': Some sand. 16 9 5 -52.8 = 25.4 BOTTOM OF BOREHOLE AT -52.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation DIR-2-88** INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 366239.4645 E 2328645.764 **DIR-2-88** Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/5/88 10/5/88 16. ELEVATION TOP OF BORING -40.2' MLLW 11' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.2 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.2\_ 0': CLAY (CH), high plasticity; dark gray, wet, high USCS plasticity, with sand. 6 6 -48.2<sup>+</sup> 8.0 8': CLAY (CL), low plasticity; olive green, low

2

3

BOTTOM OF BOREHOLE AT -51.2 ft

plasticity, with shell fragments, calcareous.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-51.2 + 11.0

12

32

**Boring Designation** DIR-3-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL N 368630.5534 E 2329481.349 DIR-3-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/31/89 5/31/89 16. ELEVATION TOP OF BORING -42.5' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.5\_ 0': SILT (ML), low plasticity; olive green, low USCS plasticity, calcareous. 0 31 33 16 2 32 27 26 26 3 17 <u>-55.5  $\pm$  13.</u>0 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-4-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-4-89 N 365763.5642 E 2329132.831 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/89 6/1/89 16. ELEVATION TOP OF BORING -35.4' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.4-0': CLAY (CH), soft; high plasticity; dark gray, wet, USCS 0 high plasticity. NOTE: Material on outside of rod was fat clay (CH), dark grey, soft, wet. 1 16 33 16 2 23 27 26  $-45.9 \pm 10.5$ 10.5': SILT (ML), low plasticity; olive green, moist, 26 low plasticity, calcareous, very uniform. 1 16 3 19 2 23 3 19 <u>-54.9</u> 19.5 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-5-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER DIR-5-89 N 363947.592 E 2329041.133 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/89 6/1/89 -43.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 11.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.3\_ 0': SILT (ML), low plasticity; olive green, moist, low plasticity, with shell fragments, calcareous. 30 1 2 20 8': Some clay. 3 18 -54.5 BOTTOM OF BOREHOLE AT -54.5 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation DIR-6-89** INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL **DIR-6-89** N 363078.4834 E 2328324.291 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/1/89 6/1/89 16. ELEVATION TOP OF BORING -41' MLLW 6. THICKNESS OF OVERBURDEN 13.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41 0': SILT (ML), low plasticity; olive green, moist, low plasticity, calcareous. 17 1 2 19 7.6': With shell fragments. 3 21 4 15 -54.8 + 13.8 BOTTOM OF BOREHOLE AT -54.8 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** DIR-7-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-7-90 N 367099.4565 E 2328722.62 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/9/90 2/9/90 INCLINED 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp **REMARKS** RQD % REC (Description) -40.9\_ 0': SILTY SAND (SM), fine to medium; dark gray to USCS black, wet, trace clay, and shell fragments, slightly calcareous. 0 1 2 11 4.5': SAND, medium to coarse; some shell fragments. 3 3 6': SAND, fine to medium; trace shell fragments. 4 11 7.5 -48.4 7.5': SAND (SP), dark gray, Poorly Graded, wet, some shell fragments, trace silt, slightly calcareous. 5 5 6 12 -51.4 \(\preceq\) 10.5 10.5': CLAYEY SAND, fine to medium; dark gray. NOTE: Mixed Zeogel mud at 51.4'. 7 13 -55.0 14.1 14.1': CLAY (CL), low plasticity; olive green, moist, 8 9 low plasticity, some sand, calcareous. -55.9<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -55.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-8-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL **DIR-8-90** N 366611.573 E 2329299.687 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/7/90 2/7/90 16. ELEVATION TOP OF BORING -29.5' MLLW 6. THICKNESS OF OVERBURDEN 25.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -29.5 0': CLAY (CH), high plasticity; dark gray to gray, USCS high plasticity, with organics. 1 0 3': Gray. 2 1 4.5': Moist, trace shell fragments, no organics. 3 3 7.5': No shells. 4 1 5 3  $-46.0 \pm 16.5$ 16.5': CLAYEY SAND (SC), fine; tan, dry, trace 6 5 shell fragments, calcareous. -47.5 <del>+</del> 18.0 18': CLAY (CL), low plasticity; tan, low plasticity, 7 trace sand, calcareous. 10 19.5': Tan to light brown, moist, no sand. 8 18 21': CLAY, low plasticity; olive green, moist, low plasticity, trace sand, calcareous. 9 24 10 22 11 14 -55.0±25.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** DIR-9-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL DIR-9-90 N 364014.5696 E 2328926.124 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/7/90 2/7/90 16. ELEVATION TOP OF BORING -42' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace sand, and shell fragments. 1 0 -46.0 4.0 4': CLAY (CL), low plasticity; olive green, moist, low 2 12 plasticity, trace sand, calcareous. 3 16 21 4 5 24 6 19 7 15 8 14 -55.5 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.5 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** FCR-10-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FCR-10-89 N 368598.5211 E 2318016.642 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/15/89 5/15/89 -32.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 23.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.3 0': SILTY CLAY (CL), low plasticity; light greenish USCS brown, low plasticity, some sand, trace silt. 16 1 2 18 3 25 4 18 15.8': Trace sand. 5 11 6 11 -55.6<del>±</del>23.3 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** FR-1-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FR-1-97 N 344832.6955 E 2338043.209 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/10/97 6/10/97 -19.1' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 44.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.6 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -19.1-0': FAT CLAY (CH), dark gray, trace shale USCS fragments, calcareous. 0 0 -28.3 9.2 9.2': CLAYEY SAND (SC), fine; gray, trace shale fragments, calcareous. 2 0  $-32.1 \pm 13.0$ 13': 2 3 3 8 5 14.5': Light gray. 3 4 2 3 -35.1 = 16.0 1 16': SAND (SM), fine; light gray, Poorly Graded, 2 trace shale fragments, calcareous. 5 2 5 3 17.5': SAND, fine to medium; non-calcareous. 4 5 11 6 3 5 11 6 5 6 7 15 8 22': Some shell fragments. 3 2 6 4 23.5': Light gray and dark gray. 4 5 11 6

**Boring Designation** FR-1-97 INSTALLATION **DRILLING LOG (Cont Sheet)** OF 2 SHEETS Charleston Harbor COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 MLLW LOCATION COORDINATES **ELEVATION TOP OF BORING** N 344832.6955 E 2338043.209 -19.1'

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	<u> </u>		16': SAND (SM), fine; light gray, Poorly Graded,					4	
] =	₽		trace shale fragments, calcareous. (continued)		7			5	10
1 -			•					5 5	
-	-							6	13
1 -	<b>₽</b>	·						7	
1 3	Ė	• [ + [	28': SILTY SAND, fine to medium; light gray, some					8	
1 3	Ė		shale fragments, calcareous.					10	20
-	<u> </u>	<b>.</b> † ] †						10	
] =	<b>E</b> ∣		29.5': Trace shell fragments.		_			8	
-	<b>₽</b>				8			10 9	19
-	₽					1		5	
1 -	Ė	.						10	18
1 -	Ė		•					8	
1 =	Ė		•					8	
-	Ŧ l	┆┼┆┼						9	19
] =	<b>₽</b>	·				1		10	
1 -	<b></b>	. [   ]	34': Some shell fragments.		_			7	47
-	<u> </u>				9			8 9	17
1 -	Ė I		35.5': Trace shell fragments.			1		5	
-	<u> </u>		Co.S. Trade one magmente.					5	13
1 =	<b>₽</b>							8	
1 3	Ē I	[ <del> </del>						7	
] =	Ē I	.						8	19
1 -	<u> </u>					-		11	
1 -	<u>+</u>	•   •	38.5': Some shell fragments.		10			7 10	21
1 :	Ė	<b>         </b>			10			11	21
-	+					1		8	
=	₹	. [   ]						12	25
-60.6	41.5							13	
	፟		41.5': CLAYEY SAND (SC), fine; olive gray,					8	
1 :	<u> </u>		calcareous.		11			12	24
] =	<u>+</u>					-		12	
1 3	‡				12			12 15	30
-63.6	 44.5				12			15	30
00.0	+ ++.0	_///	BOTTOM OF BOREHOLE AT -63.6 ft				BLOWS PER FOOT: Number required		

BOTTOM OF BOREHOLE AT -63.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** FR-2-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FR-2-97 N 346475.6841 E 2336777.508 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 0 12 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/11/97 6/11/97 INCLINED 16. ELEVATION TOP OF BORING -23' MLLW 6. THICKNESS OF OVERBURDEN 29.6 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.6 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp **REMARKS** RQD % REC (Description) -23 0': SILTY SAND (SM), fine; dark gray, trace shell USCS fragments, calcareous. 1 0 -25.6 = 2.6 2.6': SAND (SP), fine; gray, Poorly Graded, trace 2 5 8 shell fragments, calcareous. 3 4.1': No shell fragments. 9 15 24 21 12 4 24 5.6': Light gray, no shell fragments, non-calcareous. 3 33 8 19 4 6 4 12 6 4 10.1': SAND, fine to medium. 4 7 4 17 11.6': SAND, medium to coarse. 5 36 19 3 13.1': SAND, coarse; trace silt. 14 7 21  $-37.6 \pm 14.6$ 14.6': SANDY SAND (SM), fine to medium; gray. 3 6 3 <u>-39.1</u> <u>1</u>6.1 2 16.1': SAND (SP), medium; light gray, Poorly 7 12 Graded, with shells, and shell fragments, calcareous. 8 5 7 17.6': Fine to medium; gray, trace shell fragments. 17 10 7 9 18 -43.6 = 20.6 5 8 20.6': No recovery 20 -45.1<u>丰</u>22.1 12 6 22.1': SILTY SAND (SM), fine to coarse; gray, 10 12 8 22 some shell fragments, calcareous.  $-46.6 \pm 23.6$ 3 23.6': CLAYEY SAND (SC), fine to medium; dark 4 9 8 gray, some shell fragments, calcareous. -48.1<u>±</u>25.1 25.1': LEAN SANDY CLAY (CL), olive gray. 4 4 6 10 10  $-49.6 \pm 26.6$ 26.6': CLAYEY SAND (SC), fine; olive gray, 2 10 11 4 calcareous. 6 12 14 -52.6 = 29.6 BOTTOM OF BOREHOLE AT -52.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** HI-35-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES Failing 314 HI-35-88 N 352465.5587 E 2333057.978 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 2/28/88 2/28/88 16. ELEVATION TOP OF BORING -39.7' MLLW 6. THICKNESS OF OVERBURDEN 10.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4' Bob Green, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-39.7_ 45.9			0': SILT (MH), black, inorganic, calcareous.		1		USCS		0
-47.4	7.7		<b>6.2</b> ': LEAN SANDY CLAY (CL), green, with shell fragments, glauconitic, calcareous.		2				10
-			7.7': FAT SANDY CLAY (CH), green, calcareous.		3				8
-50.4	10.7				4				12

BOTTOM OF BOREHOLE AT -50.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** HI-36-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES HI-36-88 N 354612.5837 E 2333407.612 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 2/28/88 2/28/88 16. ELEVATION TOP OF BORING -39.3' MLLW 6. THICKNESS OF OVERBURDEN 10.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Bob Green, Geologist

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ELEV DEPT	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-39.3 		<b>0':</b> FAT SANDY CLAY (CH), dark gray, with shell fragments.		1		USCS		0
-44.0 4.7		<b>3.2':</b> LEAN SANDY CLAY (CL), green, with gravel, and shell fragments, calcareous.		2				14
+ + + + + + + + + + + + + + + + + + + +		4.7': FAT SANDY CLAY (CH), gray, calcareous.		3				16
				4				11
+ + + + + + + + + + + + + + + + + + + +				5				13
-50.0 <del>-</del> 10.7				6				12

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** HI-37-88

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DRILLIN	C I	06	DIVISION		INS	TALL	ATIO	N			SHEE	ĒT ·	1	
DRILLIN	GL	.UG	South Atlantic Di	vision	C	Char	lesto	n H	arbor		OF	1 sh	EETS	
1. PROJECT									/STEM		VERT			
Charleston	Harl	bor Entr	ance Channel Deep	pening	State Plane - South Carolina NAD83 MLLW									
			·		10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail									
2. HOLE NUMBER	R		CATION COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL									
HI-37-88			N 356026.5079 E 2	2333140.378	Failing 314									
3. DRILLING AGE					12.	TOTA	AL SA	MPLE	S	DISTURBED	UNDIS	STURBED		
U.S. Corps of Engineers - Savannah District								5		5		0		
4. NAME OF DRIL			13.	TOTA	AL NU	MBEF	R CORE BOXES	0						
C.D. Justiss 5. DIRECTION OF		DINIO	: DEG FROM	BEARING	—— 14. ELEVATION GROUND WATER NA									
S. DECTRON OF BORNING    VERTICAL   VERTICAL     INCLINED							BOF	RING	START		COMPLET			
☐ INCLINED										2/28/88	-	28/88		
6. THICKNESS O	FOV	ERBURDE	EN 7.7'						P OF BORING	-42.2' ML				
7. DEPTH DRILLE	ED IN	TO ROCK	0'						ECOVERY FOR		١			
8. TOTAL DEPTH	OF F	BORING	49.9'		18.		_		D TITLE OF INSI n, Geologist					
0.101/1222.11			10.0					5100	iri, Ocologist			Τ_	Φ	
ELEV DEPTH	EGEND		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value	
40.0	쁘		, .	•			Sa	8,				a C	ż	
-42.2	.	0': SAN	DY SAND (SM), fine; d	ark gray, trace clay,					USCS					
<u> </u>	. [   [ .	and sne	Il fragments.				1						0	
<u> </u>	`						'						0	
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-45.4 + 3.2	•													
+			AYEY FAT SAND (SC)	, fine; dark gray, with	1									
T .		shell fra	gments.				3						0	
T T							3						0	
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-49.9 <sup>‡</sup> 7.7	////	50770		10.0 %					D. 0140 DED					

BOTTOM OF BOREHOLE AT -49.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** HI-38-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL HI-38-94 N 349479.8773 E 2332613.767 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/6/94 8/6/94 16. ELEVATION TOP OF BORING -45.5' MLLW 6. THICKNESS OF OVERBURDEN 29.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 74.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.5 0': FAT CLAY (CH), gray, trace sand. USCS Used salt water drilling mud. 1 0 0 2 0 0 15.6': Trace shells, and shell fragments. 3 5 -64.1<u></u> 18.6 18.6': CLAYEY SAND (SC), fine; olive gray, 4 8 calcareous. 9 12 5 22 9 9 6 8 -74.6<u>丰</u>29.1 BOTTOM OF BOREHOLE AT -74.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** HI-39-94 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL HI-39-94 N 356174.5195 E 2333501.418 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/22/94 8/22/94 INCLINED 16. ELEVATION TOP OF BORING -46.4' MLLW 6. THICKNESS OF OVERBURDEN 16.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.3 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp **REMARKS** RQD % REC (Description) -46.4 0': SILTY SAND (SM), fine to medium; dark gray to USCS black, trace shells, and shell fragments. 1 0 -49.8 3.4 3.4': FAT CLAY (CH), dark gray, trace sand, and shell fragments. 2 0 -51.3 4.9 4.9': CLAYEY SAND (SC), fine to medium; dark gray, trace shell fragments. 3 5 1 7.9': Some shell fragments, trace gravel. 7 <u>-55.8</u> + 9.4 9.4': SAND (SP), fine to medium; gray, Poorly Graded, some shell fragments, trace silt. 6 4 10.9': Trace clay, and shells. 6 12.4': No clay. 28 5 31 6 26  $-63.3 \pm 16.9$ BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -63.3 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** HI-40-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL HI-40-94 N 351161.5556 E 2332997.395 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/5/94 8/5/94 INCLINED 16. ELEVATION TOP OF BORING -30.3' MLLW 6. THICKNESS OF OVERBURDEN 18.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -30.3 0': CLAYEY SILT (MH), dark gray to black, trace USCS sand, and shell fragments. 0 1 Used salt water drilling mud. 2.4': Some sand, and shell fragments. 1 -34.2 3.9 3.9': SAND (SP), medium to coarse; gray, Poorly Graded, and shell fragments. 9 2 -37.2  $\pm$ 6.9 6.9': FAT CLAY (CH), dark gray, trace sand, and shell fragments. 3 2 9.9': Some sand, and shell fragments. 3 -41.7 = 11.4 11.4': CLAYEY SAND (SC), fine; olive gray, calcareous. 4 5 5 5 5 15.9': Shell fragments. 8 6 10 -49.2<sup>±</sup> 18.9 BOTTOM OF BOREHOLE AT -49.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** HI-41-94 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL HI-41-94 N 353768.7164 E 2333068.266 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/7/94 8/7/94 16. ELEVATION TOP OF BORING -44.8' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 67.3 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -<del>45</del>.₽ 0.3 O': CLAYEY SILT (MH), dark gray to black. 1 USCS 0.3': CLAYEY SAND (SC), fine; olive gray, 2 2 calcareous. No drilling mud used. 5 10 3 14 21 13 -53.8 干 9.0 9': LEAN CLAY (CL), olive gray, some sand, calcareous. 4 22 20 -56.8<del>+</del> 12.0 12': CLAYEY SAND (SC), fine; olive gray, calcareous. 5 17 16 12 6 15 16 23 7 20 -67.3  $\pm$  22.5 BOTTOM OF BOREHOLE AT -67.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30".

with the Unified Soil Classification System

**Boring Designation** HI-42-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL HI-42-97 N 349864.5374 E 2333539.411 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/11/97 6/11/97 16. ELEVATION TOP OF BORING -20.9' MLLW 6. THICKNESS OF OVERBURDEN 32.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.2 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -20.9 0': No recovery. USCS 0 -23.3 = 2.4 2.4': SILTY SAND (SM), fine to medium; gray and d gray, trace shell fragments, calcareous. 0 11.3': Dark gray. 16 8 14 24 14.3': Gray. 2 45 10 3 4 8 8 5 4 12 5 11 12 12 10 -51.7 = 30.8 30.8': CLAYEY SAND (SC), fine; olive gray, 6 10 calcareous. -53.2<del>±</del>32.3 BOTTOM OF BOREHOLE AT -53.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** HR-1 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES HR-1 N 348666.2769 E 2332705.919 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 3/30/89 3/30/89 16. ELEVATION TOP OF BORING -44.1' MLLW 6. THICKNESS OF OVERBURDEN 8.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.4' Matthew Delano, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-44.1_			0': SILTY SAND (SM), fine; gray, some clay, trace shell fragments.		1		USCS		21
									0
  -52.4	- - - - - 8.3				2				11

BOTTOM OF BOREHOLE AT -52.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** HR-2 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES HR-2 N 348227.6369 E 2333763.184 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 3/30/89 3/30/89 16. ELEVATION TOP OF BORING -44.7' MLLW 6. THICKNESS OF OVERBURDEN 11.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.4 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': CH FAT CLAY (CH), high plasticity; gray, high -44.7 USCS plasticity, calcareous, with lenses of black watery fat clay and grey silty sand. 1 1 7 2 4 3 7 -56.4  $\perp$  11.7 BOTTOM OF BOREHOLE AT -56.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** HR-3 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES HR-3 N 347222.2499 E 2333588.454 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/11/89 4/11/89 16. ELEVATION TOP OF BORING -44.6' MLLW 6. THICKNESS OF OVERBURDEN 11.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 Matthew Delano, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH ELEV Samp REMARKS RQD % (Description) -44.6 USCS 0': FAT CLAY (CH), gray, slightly calcareous. 6 1 0 4 6': Trace shell fragments, trace sand. 2 6 9': No shell fragments. 3 0 -55.7-BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.7 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30".

with the Unified Soil Classification System

**Boring Designation** HR-34-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 347094.9141 E 2334528.869 HR-34-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/27/88 2/27/88 16. ELEVATION TOP OF BORING 41.1' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING -32.1' Bob Green, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.1 USCS 0': CLAYEY FAT SILT (SC), fine; dark gray, with shell fragments. 8 1 40.1 1.0 1': SANDY LEAN CLAY (CL), green, with shell 2 39.6 -1.5 fragments, calcareous. 1.5': SANDY FAT CLAY (CH), gray, some shell fragments, calcareous. 3 15 4 14 5 9 6 9

BOTTOM OF BOREHOLE AT 32.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

32.1

9.0

7

14

**Boring Designation** HR-5-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER HR-5-94 N 348561.2728 E 2333967.135 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/8/94 8/8/94 16. ELEVATION TOP OF BORING -37.2' MLLW 6. THICKNESS OF OVERBURDEN 8.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45.8' James Arthur, P.G.

			1010	- Carried 7 Harrary 1 101						
	РТН	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %		Blows/ 0.5 ft	N-Value	
-37.2	.7		<b>0':</b> SILTY SAND (SM), fine to medium; gray, some shell fragments.		1		Used salt water drilling mud		34	
			4.7': FAT CLAY (CH), gray.						6	
-45.8	.6				3				0	

BOTTOM OF BOREHOLE AT -45.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** HR-5A-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 348592.1 E 2334015.475 HR-5A-94 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/8/94 8/8/94 16. ELEVATION TOP OF BORING -16.8' MLLW 6. THICKNESS OF OVERBURDEN 35.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.4 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -16.8= 0': SILTY SAND (SM), fine; dark gray, trace clay, USCS 1 3 and shell fragments. Used salt water drilling mud 21 10 2 12 20 10 3 14 6 24 <u>-30.3 13.5</u> 13.5': No recovery 2 -31.8 = 15.0 15': SILTY SAND (SM), fine; dark gray, trace clay, 4 9 **-33.0 = 16.2** and shell fragments. 16.2': FAT CLAY (CH), dark gray, some sand, and shell fragments. 5 0 6 0 23.7': Trace sand, and shell fragments. 0 7 0 -52.4 = 35.6 BOTTOM OF BOREHOLE AT -52.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** LTC-3

												יווווסם	<del>g DCS</del>	ignati			<del>, , , , , , , , , , , , , , , , , , , </del>		
	RILLIN	C I	00	DIVIS	ION			INSTAI	LLA	OIT	N					SI	HEET	1	
		GL	.UG	So	uth Atlantic	Division			_			arbor				0			EETS
1. PRO												YSTEM				: VE	ERTIC		
Cha	rleston	Harl	oor En	trance	Channel D	eepening						South C						LW	
												OF BIT A				s Vibr	acor	e Sy	/sten
	NUMBE	R			N COORDINAT	-				FAC	TURE	ER'S DESIG	NATION	OF DRIL	LL				
LTC	-			N 347	746.5 E 2	331114		N/A											
	LING AGE							12. TO	TAL	SA		ES	DIS	STURBED	)	UNI	DISTU		)
	na Tec		ogies								0		:_	0		<u>:</u>	(	)	
	OF DRII	LLER						13. TO	TAL	_ NU	MBEI	R CORE BO	OXES	0					
	ton, W.	E BOE	ING		DEG FROM	BEARIN	IG.	14. ELI	EVA	ATIO	N GR	OUND WA	TER	NA					
	ERTICAL		(IIVO		VERTICAL	EDEARIN		15. DA			INIC	S	TARTED	)		COMPL	ETED	1	
	NCLINED				,			IS. DA	1 = 1	DUR	KIING	:	6/	10/04	:	(	6/10/	04	
6. THIC	KNESS O	F OVI	ERBURD	EN	10	)'		16. ELI	VΑ	ATIO	N TO	P OF BORI	NG	-40.6	5' MLI	LW			
7 DEPT	H DRILLE	ED IN.	TO ROC	ζ	(	)'		17. TO	TAL	_ CO	RE R	RECOVERY	FOR BO	RING	N/A				
<b>-</b>						*		18. SIG			RE AN	ID TITLE O	F INSPE	CTOR					
8. TOTA	L DEPTH		ORING		50.65	<b>D</b> '			N/										
ELEV	DEPTH	LEGEND		FIELD	CLASSIFICAT (Descr	ION OF MATEF	RIALS	% REG		Samp No.	RQD %		R	EMARKS	6		70700	0.5 ft	N-Value
-40.65 -45.7	5.0		mud".	, ,	,	organics, "bla						USCSW from Cus Harbor, S obtain re	tomhou SC. Six	se Whai cores co	rf, Cha llected	rleston I to			
-46.2	5.5					(SP), fine to c	coarse; and	Ч											
			shell fr. <b>5.5':</b> LE			(Cooper Marl	).	-/											
-50.7	10.0																		
-30.7 -	<u> </u>		BOTTO	OM OF	BOREHOLE	AT -50.7 ft				ı									

**Boring Designation** MB-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES MB-1-88 N 362477.4846 E 2328253.391 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 9/30/88 9/30/88 16. ELEVATION TOP OF BORING -41.3' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': LEAN SILTY CLAY (CL), olive green, with shell -41.3\_ USCS fragments, calcareous. 7 1 16 16 2 34 6': SILTY, trace sand. 30 3 29 <u>-50.3 † 9.0</u> BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** MB-2-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL MB-2-90 N 360948.6754 E 2329120.626 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 5/13/90 5/13/90 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ 0': LEAN CLAYEY SILT (ML), olive green, moist, USCS calcareous. 1 2 2 16 3 12 4 12 5 15 6 19 9': Trace shell fragments. 7 19 8 16 9 16 <u>-55.6</u> 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** MB-3-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL MB-3-90 N 360785.6115 E 2328745.66 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/12/90 4/12/90 -42.7' MLLW 16. ELEVATION TOP OF BORING 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.7 0': LEAN SILT (ML), olive green, moist, calcareous. USCS 10 1 14 2 3 22 4.5': Some shell fragments. 4 14 5 19 6 20 9': CLAYEY, no shell fragments. 7 16 8 12 -54.7 + 12.0 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** NC-S-X-NORTH-99

	1/2	IVISION				ATIO			orgination	SHEE		1
DRILLING LO	JG	South Atlantic	Division					arbor			2 sн	EETS
1. PROJECT		<u> </u>						YSTEM	NADOO	: VERTI		,
Charleston Harbo	or Entrar	nce Channel De	eepening					South Caroli	าล เพลบชิง	: IV	1LLW	
2. HOLE NUMBER	1.004	TION COORDINATE	- Q					E OF BIT <b>N/A</b> ER'S DESIGNATION	ON OF DRILL			
NC-S-X-NORTH-								eneric	ON OF DRILL			
3. DRILLING AGENCY	•						MPLE		DISTURBED	UNDIST		)
General Engineer	ring						0	<u> </u>	0		0	
4. NAME OF DRILLER T. Pickett				13.	TOT	AL NU	JMBEI	R CORE BOXES	0			
5. DIRECTION OF BORIN	NG	: DEG FROM	BEARING	14.	ELE	/ATIO	N GR	ROUND WATER	NA	_		
		VERTICAL	:	15.	DATI	BOF	RING	START		COMPLETE		
INCLINED		<b>:</b>		16		/ATIO	N TO	P OF BORING	2/12/99 -12.3' ML		2/99	
6. THICKNESS OF OVER	RBURDEN	12'		_				RECOVERY FOR E				
7. DEPTH DRILLED INTO	ROCK	9'						ND TITLE OF INSF		<b>\</b>		
8. TOTAL DEPTH OF BO	RING	33.3'						kette	20.0			
ELEV DEPTH US	FIE	ELD CLASSIFICATION	ON OF MATERIALS		0/	No.					/s/ ft	lue
ELEV   DEPTH	1 11	Descrip)			% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-12.6 0.3	יי SII T <i>(C</i>	DH), tan, wet, soft,	"nuff mud"			Ø	-					
			ack, saturated, soft,									
<u> </u>	puff mud"											
<u> </u>	.5': Moist	, semi-soft.										
<b>1</b>												
$\frac{1}{2}$	3.5': Firm.											
<b>1</b>												
<b>+ /</b> //												
<b> </b>												
<b> </b>												
<b>1</b>												
-21.8 = 9.5	FI- OLAN	VEV OIL TV OAND	(OM) fine 4									
	) <b>.5':</b> CLAY black.	EY SILIY SAND	(SM), fine to medium;									
<u> </u>												
-24.3 + 12.0												
+ 12.0												
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<b>SAW FORM 1836-A</b> FEB 12	4				E	3ori	ing	<b>Designatio</b>	n NC-S	-X-NOR\$	HE1979	1 of 2

**Boring Designation** NC-S-X-NORTH-99

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ואטן	LING	LU	G (Cont Sheet)	Ch	arles	ton H	Harbor	OF 2	2 sh	EETS
PROJE	СТ			COOR	DINAT	E SYS	STEM HORIZONTAL	VERTI	CAL	
Cha	ırleston	Har	bor Entrance Channel Deepening	Sta	te Pl	ane	NAD83	l. N	/ILLW	'
LOCAT	OCATION COORDINATES					TOP C	OF BORING	-		
N 3	N 370785.228 E 2327105.23									
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-										

BOTTOM OF BOREHOLE AT -33.3 ft

**Boring Designation** NC-S-X-SOUTH-99

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	<u> </u>	<u> </u>	Sou	uth Atlantic D	Division					arbor YSTEM			2 SH	EETS
1. PROJECT  Charleston I	Hark	or Entr	rance (	Channel De	epening					South Caro	lina NAD83	VERT	ICAL <b>/ILLW</b>	
Chanosish		)	anoo	0114111101 20	opormig					OF BIT N/A		•		
2. HOLE NUMBER				COORDINATES						R'S DESIGNAT	ION OF DRILL			
3. DRILLING AGE		1-99; r	N 3706	046.196 E 2	2327147.611		TOT			neric	DISTURBED	UNDIST	URREI	,
General Eng	gine	ering					.017	0, .	0		0	CABIO	0	
4. NAME OF DRIL T. Pickett	LER					13.	TOT	AL NU	IMBEI	R CORE BOXES	0	•		
5. DIRECTION OF	BOR	RING	:	DEG FROM	BEARING	14.	ELE	/ATIO	N GR	OUND WATER	NA			
				VERTICAL		15.	DATI	BOF	RING	STAR	TED 2/12/99	COMPLETI 2/1	ED 2/99	
6. THICKNESS OF	= O\/E		ENI	12'	<del></del>	16.	ELE\	/ATIO	N TO	P OF BORING	-12.8' M		2/33	
7. DEPTH DRILLE				6'		17.	TOT	AL CO	RE R	ECOVERY FOR				
						18.				ID TITLE OF INS	SPECTOR			
8. TOTAL DEPTH		ORING		30.8'				rap	Puc	kette				Φ.
ELEV DEPTH	LEGEND		FIELD C	CLASSIFICATIO (Descript	N OF MATERIALS ion)		% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-13.8 0.3	1//			et, soft, "puff r										
‡		<b>0.25':</b> S "puff mu	ILTY CI ıd".	LAY (OH), blad	ck, saturated, soft,									
#		<b>1.5':</b> Mo	ist, sen	ni-soft.										
‡														
王														
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+														
<u> </u>		4.51.5												
#		<b>4.5':</b> Fire	m.											
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-24.3 <del>+</del> 11.5	//													
-24.8 T 12.0	+ [+	<b>11.5'</b> : C	LAYEY	SILTY SAND	(SM), fine to media	um;								
±	•	black.												
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FEB 12	550	_					t	oori	ıııg	Designation	UN 110-5	S-X-SOUT	17-99	11 01 2

**Boring Designation** NC-S-X-SOUTH-99

	Donnig D	Coignation	140 0 X 0001
DDILLING LOC (Cont Choot)	INSTALLATION		SHEET 2
DRILLING LOG (Cont Sheet)	Charleston Harbor		OF 2 SHEETS
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW
LOCATION COORDINATES	ELEVATION TOP OF BORING	•	•
N 370646.196 E 2327147.611	-12.8'		
ELEV DEPTH ED STEELD CLASSIFICATION OF MATERIALS (Description)	Samp No.	REMARKS	Blows/ 0.5 ft N-Value

BOTTOM OF BOREHOLE AT -30.8 ft

**Boring Designation** RR-11-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-11-88 N 339480.2969 E 2346765.138 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/13/88 2/13/88 16. ELEVATION TOP OF BORING -41.6' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.6\_ 0': CLAY (CH), high plasticity; olive green, high USCS plasticity, with shell fragments, glauconitic, w/ 1 30 pockets of sand. 2 34 3 22 4': Dark green, slightly micaceous. 4 29 -47.1 -5.5 5.5': CLAYEY SAND (SC), fine; olive green, 5 -47.6 6.0 glauconitic, slightly micaceous. 6': CLAY (CH), high plasticity; dark green, high plasticity, micaceous w/ pockets of sand. 20 6 7 26

BOTTOM OF BOREHOLE AT -50.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.6

9.0

**Boring Designation** RR-12-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES RR-12-88 N 338914.4521 E 2347549.239 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/13/88 2/13/88 16. ELEVATION TOP OF BORING -41.4' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) **0':** CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, slightly sandy, w/ lenses of dark -41.4\_ USCS 1 36 grey, very loose sand. 1.5': Sandy. 2 28 3 23 4 24 5.5': Dark green and olive green. 5 21 6 17 -50.4 9.0 BOTTOM OF BOREHOLE AT -50.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** RR-13-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES RR-13-88 N 338487.5636 E 2348110.315 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 2/13/88 2/13/88 16. ELEVATION TOP OF BORING -40.2' MLLW 6. THICKNESS OF OVERBURDEN 10.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 Bob Green, Geologist

FIELD CLASSIFICATION OF MATERIALS (Description)  FIELD CLASSIFICATION OF MATERIALS (De								,g		
1.3': CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, sandy, w/ lenses of dark grey, sand.  2  33  5.8': Interlayered dark green and olive green.  4  5  17  24			LEGEND		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
1.3': CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, sandy, w/ lenses of dark grey, sand.  2  33  5.8': Interlayered dark green and olive green.  4  5  17  6  24	-40.2	<u> </u>		0': No sample recovered.						
1   2   33   36   36   37   38   38   38   38   38   38   38	-41.5	1.3								
-50.5 <del>-</del> 10.3 6	-			<b>1.3':</b> CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, sandy, w/ lenses of dark grey, sand.		1				36
-50.5 <del>-</del> 10.3 6	-	- - - - - -				2				33
-50.5 <del>-</del> 10.3 6	-	- - - - - - -				3				26
-50.5 <del>-</del> 10.3 6	-	<del>-</del> - - - - - -		5.8': Interlayered dark green and olive green.		4				22
-50.5 + 10.3	-					5				17
	-50.5	10.3				6				24

BOTTOM OF BOREHOLE AT -50.5 ft

**Boring Designation** RR-14-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES RR-14-88 N 340364.225 E 2346436.981 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/14/88 2/14/88 16. ELEVATION TOP OF BORING -39.6' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1' Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.6\_ USCS 0': CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, slightly sandy. 1 28 0.5': Lenses of black, fat clay w/ shell fragments. 1.5': SANDY. 2 15 3 19 4.5': Dark green and olive green. 4 14 5 14 6 13

BOTTOM OF BOREHOLE AT -50.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.1  $\pm$  10.5

7

22

**Boring Designation** RR-15-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES RR-15-88 N 341935.6253 E 2343363.711 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING

15. DATE BORING

16. ELEVATION TOP OF BORING

17. TOTAL CORE RECOVERY FOR BORING

18. SIGNATURE AND TITLE OF INSPECTOR

8. TOT <i>A</i>	L DEPTH	I OF E	BORING 50'				en, Geologist		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-42.8_    -45.5 -	-		<b>0':</b> CLAY (CH), high plasticity; gray, high plasticity, with shell fragments, slightly glauconitic.		1		USCS		0
-			<b>2.7':</b> CLAYEY SAND (SC), fine; dark gray, with shelf ragments, glauconitic, strong sulpher odor	I	2				5
-					3				0
-50.0					4				7

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BOTTOM OF BOREHOLE AT -50.0 ft

VERTICAL

7.2'

0'

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

2/14/88

-42.8' MLLW

N/A

COMPLETED

2/14/88

VERTICAL

6. THICKNESS OF OVERBURDEN

7. DEPTH DRILLED INTO ROCK

**Boring Designation** RR-16-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-16-88 N 343345.4057 E 2342287.467 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/14/88 2/14/88 16. ELEVATION TOP OF BORING -37.1' MLLW 6. THICKNESS OF OVERBURDEN 13.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.1\_ 0': CLAY (CH), high plasticity; gray, high plasticity, USCS with shell fragments, interlayered w/ poorly graded 0 1 7.2': End of sand layers. 2 6 3 0 4 20 -48.3 11.2 11.2': SAND (SP), fine to medium; gray, Poorly 5 Graded, with shell fragments, slightly clayey. 6 14 -49.8 🖵 12.7 12.7': CLAYEY SAND (SC), fine; gray. 7 -50.3 BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** RR-19-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-19-97 N 344162.919 E 2339490.779 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/5/97 6/5/97 -11.4' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 44.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -11.4 0': CLAYEY SILT (MH), high plasticity; gray, high USCS plasticity, some sand, trace shells, calcareous. 0 -17.8 = 6.4 6.4': CLAY (CH), high plasticity; gray, high plasticity. 2 0 21.2': Trace sand, and silt, shell fragments. 3 0 27.1': Trace organics.

**Boring Designation** RR-19-97

								Burning Designation	<u> </u>	JI	
DDII	LINIC	10	C (Cant Chapt)	INS	STALL	ATIO	N		SHEET	2	2
DKIL	LING	LO	G (Cont Sheet)	(	Char	lest	on H	larbor	of 2	SH	EETS
PROJE	CT			CC	ORDI	NATE	SYS	TEM HORIZONTAL	VERTIC	AL	
Cha	rleston	Har	bor Entrance Channel Deepening	9	State	e Pla	ane	NAD83	. MI	LW	
LOCATI	ON COO	RDIN	ATES	EL	EVAT	ION T	OP O	F BORING	•		
N 34	14162.9	919	E 2339490.779	-	-11.4						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
			6.4': CLAY (CH), high plasticity; gray, high plasticity (continued)  32.3': CLAY, high plasticity; gray, high plasticity, trace organics.	<i>'</i> .		4					0
	38.8					5					0
-51.7	40.3		<b>38.8':</b> SILT (OL), dark grayish brown and dark brown, some organics, and clay, some sand.			6				0 0 8	8
-53.2	41.8		<b>40.3':</b> SAND (SP), fine to medium; gray, Poorly Graded.			7				3 10 8	21
			<b>41.8':</b> SILTY SAND (SM), fine to medium; dark brownish gray, trace clay.			8				0 6 8	14
-56.2	44.8		<b>43.3':</b> SILTY SAND, medium to coarse; dark gray, trace clay.			9				4 3 6	13

BOTTOM OF BOREHOLE AT -56.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SC-1-94 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SC-1-94 N 338624.0551 E 2343574.82 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/17/94 8/17/94 16. ELEVATION TOP OF BORING -29.6' MLLW 6. THICKNESS OF OVERBURDEN 22.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 52' 8. TOTAL DEPTH OF BORING James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -29.6 0': CLAYEY SILT (MH), dark gray to black, some USCS 0 1 0 <u>-47.5‡</u> 17.9 17.9': WELL GRADED GRAVEL CLAYEY SAND (SC), fine; dark gray to black, some silt. 2 4 0 20.9': Fine to medium; shell fragments. 3 8 <u>-52.0 + 2</u>2.4 BOTTOM OF BOREHOLE AT -52.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SC-S-1-99

								Boring De	esignation	<u> </u>	<u> </u>	<u> 1-99</u>	
DRILLING	06	DIVISION			STALL						SHEET		1
	LUG	South Atlantic Div	rision					arbor			OF 1		EETS
1. PROJECT								YSTEM	NADOS	:	VERTI		, ]
Charleston Ha	rbor Er	ntrance Channel Deep	ening					South Caroli	na NAD83	:	IV	LLW	
								OF BIT N/A					
2. HOLE NUMBER	į L	OCATION COORDINATES	00000 070					R'S DESIGNATI	ON OF DRILL				
SC-S-1-99 3. DRILLING AGENCY	<u>:</u>	N 364152.422 E 232	26620.672		VIDTE VTOT			neric	DIOTUDDED	:	LIDIOTI	IDDE	
General Engine				12.	1017	AL SA	MPLE 0	:5	DISTURBED 0	: 0	NDIST	0 JKRET	,
4. NAME OF DRILLER				12	TOT	VI NII		R CORE BOXES	0	<b>:</b>		0	
T. Pickett	•			_									
5. DIRECTION OF BO	RING		BEARING	14.	ELE/	/ATIC	N GR	OUND WATER	NA NA				
		VERTICAL	:	15.	DATE	BOF	RING	START	1/8/99	СОМ	PLETE 1/8		
		· · · · · · · · · · · · · · · · · · ·	:	16	EL EV	/ATIC	N TO	P OF BORING	-37.8' ML	1 \\/	1/0	99	
6. THICKNESS OF O	/ERBURI	DEN 3.5'		_									
7. DEPTH DRILLED IN	NTO ROC	CK 4'						ECOVERY FOR		١			
8. TOTAL DEPTH OF	BORING	45.3'		18.				kette	PECTOR				
	1	10.0			<u>'</u>		luc	Kotto				_	Ф
ELEV DEPTH		FIELD CLASSIFICATION C			% REC	Samp No.	۾ ا		REMARKS			Blows/ 0.5 ft	N-Value
		(Description)	•		REC	San	RQD %					<u></u>	ź
-37.8	<b>0</b> ': SIL	TY CLAY (OH), black, sat	turated, soft, "puff										
$\perp$	mud".												
-41.3 3.5													
1 ±													
1 ‡													
‡													
<u> </u>							l	I					

BOTTOM OF BOREHOLE AT -45.3 ft

								Boring D	esignatior	1 5	G-S-	2-99	
DDII LING I	00	DIVISION		INSTA	LLA	1OIT/	N				SHEE	Γ´	1
DRILLING L	_OG	South Atlantic Divis	sion	Ch	arle	esto	n H	arbor			OF '		EETS
1. PROJECT								YSTEM			VERTI		
Charleston Har	bor Ent	trance Channel Deepe						South Carol	ina NAD83	:	N	1LLW	
								OF BIT N/A					
2. HOLE NUMBER		OCATION COORDINATES						R'S DESIGNAT	ION OF DRILL				
SC-S-2-99		N 364093.905 E 232						neric					
3. DRILLING AGENCY				12. TC	TAI	L SA	MPLE 0	S	DISTURBED 0	: 1	UNDIST	URBEI 0	)
General Engine  4. NAME OF DRILLER				40 TO	<b>.</b>			2 0005 00750		<u>:</u>		U	
T. Pickett								R CORE BOXES					
5. DIRECTION OF BO	RING	: DEG FROM :	BEARING	14. EL	EVA	ATIO	N GR	OUND WATER	NA				
		VERTICAL		15. DA	TF	BOR	RING	STAR		COI	MPLETE		
INCLINED									1/8/99	<u>:</u>	1/8	/99	
6. THICKNESS OF OV	'ERBURD	EN 4'		16. EL	EVA	ATIO	N TO	P OF BORING	-37.8' M				
7. DEPTH DRILLED IN	ITO ROCI	K 3.5'	<u>L</u>					ECOVERY FOR		<u> </u>			
				18. SI				ID TITLE OF INS	PECTOR				
8. TOTAL DEPTH OF I	BORING	45.3'			11	<del>-</del>	Puc	kette					
ELEV DEPTH 9		FIELD CLASSIFICATION OF	MATERIALS	% RE	,	Samp No.			REMARKS			Blows/ 0.5 ft	N-Value
		(Description)		RE	c	am	RQD %		KEWAKKS			B8 0.5	>
-37.8	0': SIL	TY CLAY (OH), tan, wet, "	ouff mud".		+	<del>"</del>							
	0.25': E	Black, saturated.											
L													
± (//													
<u> </u>													
-41.8 + 4.0	1												
-41.0 4.0													
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<u> </u>													
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BOTTOM OF BOREHOLE AT -45.3 ft

Boring Designation SC-S-3-99

									Dorning D	esignation	<u>.                                    </u>	<u> </u>	<u> </u>	
DRILLING	<u> </u>	00	DIVISION		NST	۱LL	ATIO	N				SHEET	Γ ,	1
DRILLING	<i>,</i>	UG	South Atlantic Div	ision	Ch	arl	lesto	n H	arbor			OF 1		EETS
1. PROJECT									YSTEM		:	VERTI		
Charleston F	Hark	or En	trance Channel Deep	ening	Sta	ate	Pla	ne -	South Carol	ina NAD83		N	ILLW	
					10. SI	ZE	AND	TYPE	OF BIT N/A					
2. HOLE NUMBER			OCATION COORDINATES						ER'S DESIGNATI	ON OF DRILL				
SC-S-3-99		<u> </u>	N 364095.762 E 232						neric					
3. DRILLING AGEN					12. TO	OTA	L SA	MPLE	is :	DISTURBED	ا	JNDIST		)
General Eng		ering						0	<u>;</u>	0	<u>:</u>		0	
4. NAME OF DRILL T. Pickett	_ER				13. TO	ATC	L NU	MBE	R CORE BOXES	0				
5. DIRECTION OF	BOB	ING	: DEG FROM	BEARING	14. El	ΕV	'ATIO	N GR	OUND WATER	NA				
VERTICAL	BOK	iinG	VERTICAL	:	1.C. D.	, T.		INIO	STAR	ΓED	CON	/PLETE	D	
☐ INCLINED					15. D	41E	BOF	KING	:	1/8/99		1/8	/99	
6. THICKNESS OF	OVE	RBURD	DEN 3.5'		16. El	E۷	'ATIO	N TO	P OF BORING	-37.8' MI	LLW			
7. DEPTH DRILLED	- INI	TO BOC			17. TO	OTA	L CC	RER	ECOVERY FOR	BORING N/A	<del>1</del>			
7. DEPTH DRILLEL	ואוו כ	O ROC	·		18. SI	GN.	ATUF	RE AN	D TITLE OF INS	PECTOR				
8. TOTAL DEPTH (	OF B	ORING	45.3'			<u>T</u>		Puc	kette					
	GEND		FIELD CLASSIFICATION C	DE MATERIAI S		,	Samp No.						/S/	N-Value
ELEV DEPTH	EGE		(Description)		RÍ	6 EC	amp	RQD %		REMARKS			Blows/ 0.5 ft	- - -
-37.8		O'. CII	TY CLAY (OH), tan, wet, '	"nuff mud"	-	-	ώ	ш.						
T T			Black, saturated, soft.	puli iliuu .										
I Ŧ	//		,											
I Ŧ	47													
T T	///													
	1/2													
-41.3 = 3.5	1/													
+ 3.5	//)													
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BOTTOM OF BOREHOLE AT -45.3 ft

**Boring Designation** SD-98-1 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 3 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SD-98-1 N 365631.83 E 2327039.57 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/4/98 8/4/98 -8.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 71.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 80' James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -8.5 0': SILTY SAND (SM), fine; dark gray, trace shell USCS fragments, calcareous. Began 5' Centers at 38.4' 1 0 3.6': Gray. 2 8 3 4 4 5 -16.6 8.1 8.1': CLAYEY SAND (SC), fine; olive gray, calcareous. 5 0 -20.2 = 11.7 11.7': FAT CLAY (CH), dark gray, trace sand, 6 0 7 0 20.8': Gray, trace sand, and shell fragments, slightly calcareous. 8 0

**Boring Designation** SD-98-1 INSTALLATION **DRILLING LOG (Cont Sheet)** Charleston Harbor 3 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365631.83 E 2327039.57 -8.5' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** RQD % (Description) 11.7': FAT CLAY (CH), dark gray, trace sand, calcareous. (continued) 26.9': No sand or shell fragments. 0 9 -38.4 = 29.9 29.9': Wash. -40.4 = 31.9 31.9': FAT CLAY (CH), gray, slightly calcareous. 10 0 -43.4±34.9 34.9': Wash. -45.4 <del>=</del> 36.9 36.9': FAT CLAY (CH), gray, slightly calcareous. 11 0 -48<u>.0  $\pm$  39.5</u> 39.5': Wash.  $-50.4 \pm 41.9$ 41.9': FAT CLAY (CH), gray, slightly calcareous. 12 0 -53.1 <del>+</del> 44.6 44.6': Wash.  $-55.4 \pm 46.9$ 46.9': FAT CLAY (CH), gray, slightly calcareous. 13 0 -57.8 ± 49.3 49.3': Wash. <u>-60.4  $\pm$  51.9</u> 51.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 14 17  $-61.9 \pm 53.4$ 53.4': Wash.

**Boring Designation** SD-98-1 INSTALLATION SHEET 3 **DRILLING LOG (Cont Sheet)** Charleston Harbor 3 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane **MLLW** NAD83 LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365631.83 E 2327039.57 -8.5 N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV **DEPTH** Samp **REMARKS** RQD % (Description) 53.4': Wash. (continued) -65.4 56.9 56.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 15 11  $-66.9 \pm 58.4$ 58.4': Wash.  $-70.4 \pm 61.9$ 61.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 16 12 -71.9 + 63.4 63.4': Wash.  $-75.4 \pm 66.9$ 66.9': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 17 15 -76.9 + 68.468.4': Wash. <u>-78.5 <del>+</del> 70.0</u> 70': CLAYEY SAND (SC), fine; light olive gray, slightly calcareous. 18 11  $-80.0 \pm 71.5$ BOTTOM OF BOREHOLE AT -80.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SD-98-2 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 3 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SD-98-2 N 365639.24 E 2327265.03 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 11 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/5/98 8/5/98 16. ELEVATION TOP OF BORING -15.5' MLLW 6. THICKNESS OF OVERBURDEN 63.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 78.8 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -15.5 0': LEAN SILT (ML), dark gray. USCS 1 0 -28.3 \pm 12.8 12.3': Some sand. 12.8': FAT SILT (MH), dark gray to black. 2 0 -33.8<del>+</del> 18.3 18.3': FAT CLAY (CH), gray. 3 0 4 0

**Boring Designation** SD-98-2 INSTALLATION **DRILLING LOG (Cont Sheet)** Charleston Harbor 3 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365639.24 E 2327265.03 -15.5' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** gg% (Description) 18.3': FAT CLAY (CH), gray. (continued) 30.1': Trace sand, and silt, slightly calcareous. 5 0 35.4': Trace organics. 6 0 41.3': Trace shell fragments. 7 0 -59.3<sup>±</sup> 43.8 43.8': Wash. -61.8 + 46.3 46.3': CLAYEY SAND (SC), fine; light olive gray, 8 0 calcareous. -63.3 = 47.8 47.8': Wash. -66.8 = 51.3 51.3': CLAYEY SAND (SC), fine; light olive gray, with chert, calcareous. 9 12  $-68.3 \pm 52.8$ 52.8': Wash. -71.8 = 56.3 56.3': 10 14 -73.3 <del>+</del> 57.8 57.8': -77.3  $\pm$  61.8

**Boring Designation** SD-98-2

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-78.8	63.3		<b>61.8':</b> CLAYEY SAND, fine; light olive gray, calcareous. <i>(continued)</i>			11						24

BOTTOM OF BOREHOLE AT -78.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SD-98-3 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SD-98-3 N 365652.45 E 2327491.06 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/8/98 8/8/98 16. ELEVATION TOP OF BORING -21.1' MLLW 6. THICKNESS OF OVERBURDEN 59.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 80.3 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -21.1<del>\_</del> 0': FAT SILT (MH), dark gray, trace sand, and shell USCS fragments. 0 -31.6 = 10.5 10.5': FAT CLAY (CH), gray, trace sand, and shell fragments. 0 2 15.5': Trace silt, slightly calcareous. 3 0 -40.2<sup>±</sup>19.1 19.1': CLAYEY SAND (SC), fine; gray, slightly calcareous. 4 0 0 5 *-*47.9 <sup>∓</sup> 26.8 26.8': Wash. -48.8 27.7 27.7': FAT CLAY, gray, some sand, and silt, slightly calcareous. 0 6  $-51.6 \pm 30.5$ 30.5': Wash

**Boring Designation** SD-98-3 INSTALLATION **DRILLING LOG (Cont Sheet) Charleston Harbor** 2 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 365652.45 E 2327491.06 -21.1' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** RQD % (Description) 30.5': Wash. (continued) -53.8 <del>=</del> 32.7 32.7': CLAYEY SAND (SC), fine; gray, some silt. 7 0 -57.1 = 36.0 **36':** Wash. -58.8 37.7 37.7': CLAYEY SAND (SC), fine; olive gray, 8 16 calcareous. <u>-60.3</u> <u>+39.2</u> 39.2': Wash.  $-63.8 \pm 42.7$ 42.7': CLAYEY SAND (SC), fine; olive gray, 9 21  $-65.3 \pm 44.2$ 44.2': Wash. -68.8 🛨 47.7 47.7': CLAYEY SAND (SC), fine; olive gray, 10 8 calcareous.  $-70.3 \pm 49.2$ 49.2': Wash.  $-73.8 \pm 52.7$ 52.7': LEAN CLAY (CL), olive gray, some sand, 11 15 calcareous. -75.3<del>=</del>54.2 54.2': Wash. *-*78.8 <u>∓</u> 57.7 57.7': CLAYEY SAND (SC), fine; olive gray, 12 19 calcareous. <u>-80.3</u> <u>+59.2</u> BOTTOM OF BOREHOLE AT -80.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SR-1-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SR-1-89 N 346123.6893 E 2334645.032 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/29/89 3/29/89 -38.9' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 13.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.2 Matthew Delano, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.9\_ 0': FAT CLAY (CH), black, wet, with sand. USCS 0 11.8': FAT CLAY, high plasticity; dark bluish gray, high plasticity, trace sand, slightly calcareous. 2 12 -52.2 13.3 BOTTOM OF BOREHOLE AT -52.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SR-2-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SR-2-89 N 346234.4904 E 2335855.405 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL VERTICAL 15. DATE BORING 3/29/89 3/29/89 16. ELEVATION TOP OF BORING -43.2' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.7 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS % REC DEPTH ELEV Samp REMARKS RQD % (Description) -43.2 0': FAT CLAY (CH), dark brownish gray, USCS calcareous. NOTE: Set 6" casing. Cleaned hole using clear water. 0 1 11 23 19 2 12 -50.7 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.7 ft to drive 1-3/8"ID splitspoon w/140 lb.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

hammer falling 30".

**Boring Designation** SR-3-94 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SR-3-94 N 346803.8566 E 2335317.483 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 9 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL VERTICAL 15. DATE BORING 8/9/94 8/9/94 INCLINED 16. ELEVATION TOP OF BORING -26.5' MLLW 6. THICKNESS OF OVERBURDEN 34.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 61' James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV** DEPTH Samp REMARKS RQD % REC (Description) -26.5 0': CLAYEY SAND (SC), fine; gray and dark olive USCS 1 10 gray, trace shell fragments. -28.0 1.5 NOTE: Set 6" diameter casing to 27.6'. 1.5': LEAN CLAY (CL), dark olive gray, trace sand. Used saltwater drilling mud. 2 19 14 15 -32.5≢ 6.0 6': CLAYEY SAND (CH), fine; dark olive gray, 3 11 calcareous. 8 -35.5 = 9.0 9': CLAYEY SAND (SC), fine; dark olive gray, 4 9 calcareous. 7 10 12.5': Olive gray, trace gravel. 10 5 18 17 13 6 9 7 12 -50.5 = 24.0 24': LEAN SANDY CLAY (CL), fine; olive gray, 7 11 calcareous. 17 13 -55.0 = 28.5 8 14 29.5': CLAYEY SAND (SC), fine; olive gray, calcareous. 13 27 -59.5 = 33.0 33': LEAN SANDY CLAY (CL), fine; olive gray, 9 25 -61.0 = 34.5 calcareous BOTTOM OF BOREHOLE AT -61.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-100-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-100-88 N 363608.422 E 2328053.209 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/25/88 8/25/88 16. ELEVATION TOP OF BORING -39.9' MLLW 6. THICKNESS OF OVERBURDEN 5.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45.7 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.9 0': FAT CLAY (CH), high plasticity; greenish brown, USCS high plasticity, calcareous. 1 0 24 2.8': With a slight odor.

2

BOTTOM OF BOREHOLE AT -45.7 ft

4.3': Trace shell fragments.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-45.7 🕇

5.8

24

37

**Boring Designation** SYR-101-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER SYR-101-88 N 364044.4281 E 2328144.136 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -38.7' MLLW 6. THICKNESS OF OVERBURDEN 6.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45.5 Matthew Delano, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.7 0': FAT CLAY (CH), high plasticity; greenish brown, USCS high plasticity, trace gravel, and clay, calcareous. 1 0 12 16 18 2 21 -45.5 BOTTOM OF BOREHOLE AT -45.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-102-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-102-88 N 364504.426 E 2328194.059 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -37.3' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46.3 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS ROD % REC (Description) -37.3 0': SAND (SP), fine to medium; grayish tan, Poorly USCS Graded, wet, trace silt. 0 1 8 -40.3 3.0 3': SILTY SAND (SM), fine to medium; gray, wet, trace shell fragments. 2 3 -41.8 4.5 4.5': SAND (SP), fine to medium; grayish tan, Poorly Graded, wet, trace silt. 3 6 -43.3 6.0 6': SILTY SAND (SM), fine to medium; tannish gray, wet, some shell fragments. 4 18 7.5': Trace clay. 5 6 -46.3 9.0 BOTTOM OF BOREHOLE AT -46.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SYR-103-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-103-88 N 363944.2802 E 2327307.17 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -39' MLLW 6. THICKNESS OF OVERBURDEN 13.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.7 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39 0': FAT CLAY (CH), dark gray, wet. USCS 1 0 2 0 13.2': FAT SILTY CLAY, light greenish brown, 3 5 <u>-52.7‡13.7</u> moist, trace sand. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -52.7 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SYR-104-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SYR-104-88 N 364381.1282 E 2326517.116 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 8/26/88 8/26/88 16. ELEVATION TOP OF BORING -37.5' MLLW 6. THICKNESS OF OVERBURDEN 14.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.6 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.5\_ 0': FAT CLAY (CH), dark gray, wet. USCS 1 0 2 13.1': FAT SILTY CLAY, light greenish brown, moist, trace sand. 3 10 -51.6 BOTTOM OF BOREHOLE AT -51.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-105-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-105-88 N 364416.0117 E 2325870.124 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 -32.7' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 13.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 46.5' 8. TOTAL DEPTH OF BORING James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.7\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -44.3 <u>+</u> 11.6 11.6': FAT CLAY (CH), dark gray, wet. 2 n -45.4 12.7 12.7': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, calcareous. 3 0 -46.5 <del>+</del> 13.8 BOTTOM OF BOREHOLE AT -46.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** SYR-106-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SYR-106-88 N 364078.9258 E 2325343.19 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 16. ELEVATION TOP OF BORING -36.5' MLLW 6. THICKNESS OF OVERBURDEN 8.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 44.8 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.5 USCS 0': CLAYEY SILT (MH), dark gray to black, wet. 1 0 -39.3 2.8 2.8': FAT CLAY (CH), dark gray, wet. 2 0 -40.3 3.8 3.8': LEAN SILTY CLAY (CL), light greenish brown, moist, some sand, calcareous. 3 0 25 4 5 41 <u>-44.8</u> + 8.3 BOTTOM OF BOREHOLE AT -44.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-107-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 364832.8953 E 2325274.069 SYR-107-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/7/88 9/7/88 16. ELEVATION TOP OF BORING -35' MLLW 6. THICKNESS OF OVERBURDEN 15.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35 0': CLAYEY SILT (MH), dark gray to brown, wet. USCS 0 1 -48.5 13.5 13.5': FAT CLAY (CH), dark gray, wet. 2 0 -49.7 <del>+</del> 14.7 14.7': LEAN SILTY CLAY (CL), light greenish 3 0 brown, moist, some sand, calcareous.  $-50.6 \pm 15.6$ BOTTOM OF BOREHOLE AT -50.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-108-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 367407.5291 E 2323576.693 SYR-108-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/2/89 6/2/89 -32.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 22' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.5-0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 -42.5 = 10.0 1 0 10': LEAN SILT (ML), olive green, moist, calcareous. 2 20 0 17 3 22 16': M, with sand. 11 15 16 4 18  $-54.5 \pm 22.0$ BOTTOM OF BOREHOLE AT -54.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-109-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-109-89 N 367067.5265 E 2323512.749 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/2/89 6/2/89 16. ELEVATION TOP OF BORING -35.1' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.1-0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 1 <u>-42.6</u> ± 7.5 7.5': LEAN SILT (ML), olive green, moist, 2 22 calcareous. 19 14 3 8 12.5': With shell fragments. 14 10 4 13 9 13 5 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-110-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-110-89 N 365964.7443 E 2324582.902 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/89 6/3/89 16. ELEVATION TOP OF BORING 37.2' MLLW 6. THICKNESS OF OVERBURDEN 17.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING -19.3 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.2 0': FAT CLAY (CH), soft; dark gray, wet. USCS 0 1 0 32.3 4.9 4.9': LEAN SILT (ML), olive green, moist, 2 24 calcareous. 18 14 3 16 16 15 4 20 20 19 5 <u> 19.3 ‡</u> 17.9 BOTTOM OF BOREHOLE AT 19.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-111-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 366775.5644 E 2323684.792 SYR-111-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/89 6/3/89 16. ELEVATION TOP OF BORING -38.7' MLLW 6. THICKNESS OF OVERBURDEN 16 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.7\_ 0': FAT CLAY (CH), soft; dark gray, wet. USCS NOTE: Sample 1 taken from outside of 1 0 <u>-51.7  $\pm$  13.0</u> 13': LEAN SILT (ML), olive green, moist, calcareous. 2 12 3 12 <u>-54.7  $\pm$  16.0</u> BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** SYR-112-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-112-89 N 364537.9458 E 2325517.112 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/89 6/3/89 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': FAT CLAY (CH), soft; dark gray, wet. USCS NOTE: Sample 1 taken from outside of rod and casing. 1 0 -51.3 9.4 9.4': LEAN SILT (ML), olive green, moist, calcareous. 20 2 3 14 17 -55.8 ‡ 13.9 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-113-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 **MLLW** Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 364468.345 E 2327738.075 SYR-113-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 13 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/21/90 2/21/90 -31.2' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV DEPTH Samp REMARKS RQD % REC (Description) -31.2-0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 -38.1 ‡ 6.9 6.5': Some sand. 6.9': LEAN CLAY (CL), olive green, moist, trace 2 2 sand, calcareous. 7 3 4 15 16 5 6 22 7 13 8 19 16.5': Trace sand. 9 19 10 18 19.5': Some sand. 11 12 12 12 13 14

**Boring Designation** SYR-113-90

Boning Designation										
DDILLING LOC (Cont Choot)	INSTALLATION		SHEET	2						
DRILLING LOG (Cont Sheet)	Charleston Harbor		of 2	SHEETS						
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICA	L						
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLI	LW						
LOCATION COORDINATES	ELEVATION TOP OF BORING	•	•							
N 364468.345 E 2327738.075	-31.2'									
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Wamp Namb Namb Namb Namb Namb Namb Namb Namb	REMARKS	Blows/	0.5 ft N-Value						

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SYR-114-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 364371.2535 E 2327215.102 SYR-114-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/22/90 2/22/90 16. ELEVATION TOP OF BORING -35.5' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.5-0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace sand. 1 0 -38.5 干 3.0 3': LEAN CLAY (CL), olive green, wet, some sand, calcareous. 2 1 4.5': Moist, some sand. 3 10 4 16 5 23 6 15 10.5': Trace sand. 7 22 8 18 17 9 10 15 11 14 18': Some sand. 12 15 -55.0  $\pm$  19.5 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-115-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-115-90 N 364543.0281 E 2325979.101 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 0 14 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 2/22/90 2/22/90 INCLINED 16. ELEVATION TOP OF BORING -4.5' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 28.5 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS **DEPTH** Samp **REMARKS ELEV** RQD % REC (Description) -4.5 0': SILTY SAND (SM), fine to medium; dark gray to USCS black, wet, trace clay, and shell fragments, slightly calcareous. NOTE: Boring terminated at 28.5' due to 0 severe weather warning. See 5 companion log SYR-115A-90 for continuation of boring. -7.5 **‡** 3.0 3': CLAYEY SAND (SC), fine to medium; dark gray, wet, trace shell fragments, slightly calcareous. 2 n <u>-11</u>.5‡ 7.0 7': FAT CLAY (CH), dark gray, moist, slightly 3 3 calcareous. 0 4 5 4 0 6 7 4 13.5': Trace sand, and shell fragments. 8 4 -19.5 + 15.0 15': CLAYEY SAND (SC), medium to coarse; dark gray to gray, wet, with shells, and shell fragments, 9 3 calcareous. -21.0 = 16.5 16.5': SILTY SAND (SM), fine to coarse; gray and 10 20 tannish gray, moist, trace shell fragments, and clay, -22.5 18.0 18': CLAYEY SAND (SC), fine to medium; tannish gray, wet, with shells, and shell fragments, 11 17 calcareous.  $-24.0 \pm 19.5$ 19.5': SILTY SAND (SM), fine to medium; grayish green, moist, trace shell fragments, and clay, 12 13 calcareous.  $-25.5 \mp 21.0$ 21': SILTY GRAVEL (GM), fine to coarse; grayish green, wet, some sand, and shell fragments, 13 9 -27.0  $\pm$ calcareous. 22.5 22.5': CLAYEY SAND (SC), fine; olive green, moist, 14 8 <u>-28.5 <del>+</del> 24.0</u> BOTTOM OF BOREHOLE AT -28.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SYR-115A-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-115A-90 N 364549.0308 E 2325995.1 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 2/28/90 2/28/90 16. ELEVATION TOP OF BORING -4.4' MLLW 6. THICKNESS OF OVERBURDEN 51.1' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 55.5' 8. TOTAL DEPTH OF BORING James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -4.4 0': Fishtailed NOTE: See companion log SYR-115-90. Fishtailed from 4.4' to 28.5'. -28.5 24.1 24.1': SANDY ELASTIC SILT CLAYEY SAND (SC), fine; olive green, moist. 1 15 25.6': Moist, trace shell fragments, and gravel. 18

**Boring Designation** SYR-115A-90

DDU LING LOC (Cont Shoot)	INSTAL	_ATIO	N	<u> </u>	SHEET	2	
DRILLING LOG (Cont Sheet)				arbor	OF 2 SHEE		
PROJECT	COORD	INATE	E SYS	TEM HORIZONTAL	VERTICAL		
Charleston Harbor Entrance Channel Deepening	Stat	e Pla	ane	NAD83	MLLW	/	
LOCATION COORDINATES	ELEVAT	T NOI	OP O	F BORING			
N 364549.0308 E 2325995.1	-4.4						
ELEV DEPTH OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
24.1': SANDY ELASTIC SILT CLAYEY SAND (SC fine; olive green, moist. (continued)	),	3				17	
		4				9	
		5				14	
28.6°: LEAN CLAY (CL), olive green, moist, some sand, calcareous.		6				11	
		7				14	
		8				18	
		9				27	
		10				22	
		11				18	
		12				20	
		13				20	
		14				16	
		15				13	
		16				17	
		17				17	
49.6': Trace sand.  -55.5 - 51.1  BOTTOM OF BORFHOLE AT -55.5 ft		18				15	
BOTTOM OF BOREHOLE AT -55.5 ft				BLOWS PER FOOT: Number red	quired		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SYR-116-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-116-90 N 364746.9625 E 2325639.075 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 32 32 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/1/90 3/1/90 16. ELEVATION TOP OF BORING 1.5' MLLW 6. THICKNESS OF OVERBURDEN 57' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 1.5 0': SILTY SAND (SM), fine to medium; dark gray, USCS 4 1 wet, with shells, and shell fragments, slightly NOTE: Top of hole located in tidal zone. calcareous. 2 12 -1.5 3.0 3': FAT CLAY (CH), gray, moist, calcareous. 3 0 7.5': Trace shell fragments. 4 0 10.5': No shell fragments, non-calcareous. 5 0 3 13.5': Trace organics. 6 0 3 7 0 4 8 0 -20.5 = 22.0 22': LEAN CLAY (CL), olive green, some sand, 9 6 calcareous. 10 5  $-23.5 \pm 25.0$ 11 7 25': CLAYEY SAND (SC), fine; olive green, wet, calcareous. 12 5 13 6 14 8

Boring Designation SYR-116-90

								Boring Designation	5YR-116	
DRIL	LING	LO	G (Cont Sheet)		STALL			Jorbor	SHEET OF 2 S	2
PROJE			- (,	Charlestor COORDINATE S						HEETS
		Harl	bor Entrance Channel Deepening							
	ON COO				State			E NAD83	: MLL\	N
LOCATI	ION COO	KUIN	ATES	ELE	EVAII	ON I	OP O	OF BURING		
N 36	4746.9	_	E 2325639.075	_1	1.5'					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value
			25': CLAYEY SAND (SC), fine; olive green, wet, calcareous. (continued)			15				5
-31.5	33.0		31.5': Trace shell fragments.			16				8
	34.5		33': LEAN CLAY (CL), olive green, moist, trace sand, calcareous.			17				9
			<b>34.5':</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.	,		18				13
-36.0	37.5					19				12
-37.5	39.0		<b>37.5':</b> LEAN CLAY (CL), olive green, moist, some sand, calcareous.			20				9
			<b>39':</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.			21				17
						22				15
=======================================						23				14
-43.5	45.0					24				15
			<b>45":</b> LEAN CLAY (CL), olive green, moist, some sand, calcareous.			25				17
1						26				20
						27				18
						28				13
=======================================						29				11
-52.5	54.0					30				12
-			<b>54*:</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.			31				12
-55.5	57.0					32				13
			BOTTOM OF BOREHOLE AT -55.5 ft					BLOWS PER FOOT: Number	required	

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SYR-117-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 365032.9385 E 2325544.031 SYR-117-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 34 34 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 3/2/90 3/2/90 16. ELEVATION TOP OF BORING 1.3' MLLW 6. THICKNESS OF OVERBURDEN 57' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) 1.3 0': FAT CLAY (CH), dark gray, wet, trace sand, and USCS shell fragments. 1': No sand. 1 0 1 0 2 9': Dark brownish gray. 3 0 3 -10.7 = 12.0 11.7': Some sand, and shell fragments. 4 7 12': CLAYEY SAND (SC), medium to coarse; dark *-*11.7 <del>±</del> 13.0 gray, wet, with shell fragments. 5 13': FAT CLAY (CH), bluish green, moist, trace 6 10 shell fragments. 15': Grayish green, trace sand, and shell fragments. 7 6  $-15.2 \pm 16.5$ 16.5': LEAN CLAY (CL), olive green, moist, some 8 2 sand, trace shell fragments, calcareous. 18': No sand or shell fragments. 9 8 10 5 11 4 -21.2 22.5 22.5': CLAYEY SAND (SC), fine; olive green, moist, 12 5 calcareous. 13 6 5 14 27': Trace organics. 7 15 28.5': Trace shell fragments. 12 16 28.7 <u>‡ 30.0</u>

Boring Designation SYR-117-90 SHEET 2

		I IN IOTAL	4.710		Boring Designation	SYR-117-	
DRILLING LO	G (Cont Sheet)	INSTALI			arbor	SHEET OF 2 SH	2
PROJECT	<u> </u>	COORD				: VERTICAL	ILLIS
	oor Entrance Channel Deepening	State			NAD83	MLLV	V
LOCATION COORDINA	ATES				F BORING		
N 365032 9385	E 2325544.031	1.3'					
		1.5	<u>o</u>				<u>e</u>
ELEV DEPTH 8	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	<b>30':</b> LEAN CLAY (CL), olive green, moist, trace sand, calcareous.		17				7
	<b>31.5':</b> Some sand.		18				12
	33': Trace sand.		19				17
			20				12
	36': Some sand.		21				9
			22				13
			23				18
			24				18
	42': Trace sand.		25				18
			26				21
			27				16
			28				11
			29				17
	<b>49.5':</b> Some sand.		30				13
			31				11
-52.7 54.0			32				11
	<b>54':</b> CLAYEY SAND (SC), fine; olive green, moist, calcareous.		33				14
-55.7 = 57.0			34				14
	BOTTOM OF BOREHOLE AT -55.7 ft				BLOWS PER FOOT: Number re	quired	
	NOTE: Soils visually field classified in accordance with the Unified Soil Classification System				to drive 1-3/8"ID splitspoon w/14 hammer falling 30".	IU ID.	

**Boring Designation** SYR-118-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-118-90 N 365592.8408 E 2325072.951 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 21 21 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/3/90 3/3/90 16. ELEVATION TOP OF BORING -17.3' MLLW 6. THICKNESS OF OVERBURDEN 37.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -17.3 0': FAT CLAY (CH), dark gray, wet, slightly USCS calcareous. 0 1 0 2 -26.3 9.0 9': CLAYEY SAND (SC), fine; olive green, moist, calcareous. 3 5 4 6 12': Trace shell fragments. 5 10 13.5': Trace shell fragments. 6 7 -32.3 + 15.015': LEAN CLAY (CL), olive green, moist, some sand, calcareous. 7 11 8 11 9 11

Boring Designation SYR-118-90

		T			Boring Designation	SYR-118	
DRILLING LOG (C	Cont Sheet)	INSTALL			orbor	SHEET	2
PROJECT		COORD			arbor TEM : HORIZONTAL	OF 2 SHEET	
	intrance Channel Deepening				<u> </u>		
	- Intrance Gharmer Deepening	State			NAD83	MLL\	N
LOCATION COORDINATES		ELEVAT	ION T	OP O	F BORING		
N 365592.8408 E 2	2325072.951	-17.3					
ELEV DEPTH US US US US US US US US US US US US US	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value
15': l sand	LEAN CLAY (CL), olive green, moist, some l, calcareous. (continued)		10				15
			11				12
± ± ±			12				22
<u> </u>			13				16
25.5	': Moist, trace sand.		14				19
# # #			15				18
<u> </u>			16				20
30':	Trace sand.		17				13
			18				12
‡ ‡			19				15
			20				15
-54.8 = 37.5			21				15
BOT NOT	TOM OF BOREHOLE AT -54.8 ft  E: Soils visually field classified in accordance the Unified Soil Classification System			ı	BLOWS PER FOOT: Number r to drive 1-3/8"ID splitspoon w/1 hammer falling 30".	equired 40 lb.	

**Boring Designation** SYR-119-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SYR-119-90 N 366454.7235 E 2324534.824 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 16 1 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 3/4/90 3/4/90 16. ELEVATION TOP OF BORING -10.4' MLLW 6. THICKNESS OF OVERBURDEN 45' 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH Samp N ELEV REMARKS RQD % (Description) -10.4 USCS 0': FAT CLAY (CH), gray, moist, trace shell fragments. 0 1 2 2 0 9': Trace sand, no shell fragments. 3 0 0 4

**Boring Designation** 

DRIL	DRILLING LOG (Cont Sheet)				STALI Chai			SHEET 2 OF 2 SHEETS				
PROJE	СТ				OORD					VERTICAL		
Cha	rleston	Har	bor Entrance Channel Deepening		State	e Pla	ane	NAD83		MLLW	,	
LOCAT	ION COO	RDIN	ATES	EL	EVAT	ION T	ГОР О	OF BORING	•			
N 36	66454.7		5 E 2324534.824		-10.4							
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
	27.0		<b>0':</b> FAT CLAY (CH), gray, moist, trace shell fragments. <i>(continued)</i>			5					0	
-38.2 - - -	27.8		27.8': LEAN CLAY (CL), olive green, moist, some sand, calcareous.			6					7	
						8					1	
			31.5': Trace sand, and shell fragments.			9					1	
-						10					2	
=======================================			34.5': No shell fragments.			11					1	
			27.5h.Tuana ann d			12					1	
			37.5': Trace sand.  39': Some sand.			13					1	
-			40.5': Trace gravel.			14					1	
	<del> </del>		42': No gravel.			15	-				1	
-			<del>g</del> , <del>a. v.</del> .			16					1	
-55.4	45.0		BOTTOM OF BOREHOLE AT -55.4 ft			17		BLOWS PER FOOT: Number	required		1	
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System					to drive 1-3/8"ID splitspoon was hammer falling 30".	/140 lb.			

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** TCL-1-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 352598.9859 E 2329919.993 TCL-1-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/3/88 10/3/88 16. ELEVATION TOP OF BORING -40.2' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.7 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.2 USCS 0': FAT CLAY (CH), dark black to black, wet. 0 1 -45.2 5.0 5': CLAYEY SAND (SC), fine; green to gray, wet, 2 7 with shell fragments. 9 3 0 -49.2 9.0 9': LEAN SILT (ML), olive green, trace sand, calcareous. 32 4 <u>-50.7</u> - 10.5 BOTTOM OF BOREHOLE AT -50.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCL-2-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCL-2-90 N 353534.8176 E 2329080.849 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 1 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/1/90 2/1/90 16. ELEVATION TOP OF BORING -40.1' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.1\_ 0': SILTY SAND (SM), medium to coarse; gray, wet, USCS with shell fragments. NOTE: No recovery from 43.1' to 44.6'. Wash return had large amount of small 1 1 shells, shell fragments & some fine 11 gragel size fossil particles. Took double drives from 44.6' to 47.6' to insure recovery. -43.1 <sup>-</sup> 3.0 3': No recovery. 4.5 -44.6 4.5': FAT CLAY (CH), gray, wet, with shell fragments. 2 2 5 7.5': Trace sand, and shell fragments. 3 0 4 2 -55.1  $\pm$  15.0 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCL-3-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCL-3-90 N 352417.9281 E 2329583.027 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/5/90 2/5/90 16. ELEVATION TOP OF BORING -43.2' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.2 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.5\_ 0': CLAYEY SILT (MH), dark brownish gray to USCS black, moist, trace shell fragments. 0 -49.7 6.5 6.5': FAT CLAY (CH), dark gray to gray, moist, 2 trace shell fragments. 2 8': Gray, no shell fragments. 3 0 4 0 11': Trace shell fragments. 5 2 <u>-56.2  $\pm$  13.0</u> BOTTOM OF BOREHOLE AT -56.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCL-4-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 351880.0672 E 2330300.108 TCL-4-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/19/90 1/19/90 16. ELEVATION TOP OF BORING -38.5' MLLW 6. THICKNESS OF OVERBURDEN 16.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.5 0': CLAYEY SILT (MH), dark gray to black, trace USCS sand, and shell fragments. 0 -45.3 <del>+</del> 6.8 6.8': FAT CLAY (CH), greenish gray, trace sand, 2 0 and shell fragments. 3 0 4  $-49.3 \pm 10.8$ 10.8': CLAYEY SAND (SC), fine to medium; gray, some gravel. 4 0 12.3': CLAYEY SAND, fine; olive green, calcareous. 5 28 -52.3 + 13.820 6 7 26 BOTTOM OF BOREHOLE AT -55.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** TCL-5-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCL-5-90 N 351262.0364 E 2330072.213 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/31/90 1/31/90 16. ELEVATION TOP OF BORING -38.1' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.1' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.1 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -45.6 7.5 7.5': FAT CLAY (CH), gray, wet, trace sand. 2 1 9': Trace sand, and shell fragments. 2 3 10.5': Trace sand, and shell fragments. 0 4 5 4 0 6 7 6 8 1 <u>-56.1</u>  $\pm$  18.0 BOTTOM OF BOREHOLE AT -56.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCL-6-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 349920.1589 E 2330626.429 TCL-6-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/30/90 1/30/90 16. ELEVATION TOP OF BORING -37.4' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.4 0': CLAYEY SILT (MH), dark greenish gray to gray, USCS 1 0 -47.9<sup>±</sup> 10.5 10.5': FAT CLAY (CH), greenish gray, wet. 2 1 3 1 -51.9 ‡ 14.5 14.5': CLAYEY GRAVEL (GC), fine; greenish gray, 4 10 -52.4 - 15.0 wet, some sand, trace shell fragments. 15': SAND (SP), coarse; gray, Poorly Graded, wet, 5 2 some gravel, trace clay -53.9<sup>±</sup> 16.5 16.5': CLAYEY SAND (SC), fine; gray, wet. 6 10 -54.9 \(\pm\) 17.5 17.5': LEAN CLAY (CL), olive green, moist, some 7  $-55.4 \pm 18.0$ sand, calcareous. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** TCL-7-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 349334.2074 E 2330842.525 TCL-7-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/30/90 1/30/90 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -43.6 1.5 1.5': FAT CLAY (CH), greenish gray, wet. 2 1 -46.3 4.2 3 4.2': LEAN CLAY (CL), olive green, moist, trace sand, calcareous. 4 11 6': Some sand. 5 9 6 12 7 13 8 23 9 12 <u>-55.6</u> 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.6 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCL-8-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCL-8-90 N 349816.342 E 2331625.437 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/21/90 1/21/90 INCLINED 16. ELEVATION TOP OF BORING -40.7' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp **REMARKS** RQD % REC (Description) -40.7\_ 0': SILTY SAND (SM), fine to medium; dark gray, USCS wet, with shell fragments, trace clay. 0 1 -43.7 3.0 3': FAT CLAY (CH), dark gray, moist, trace sand, and shell fragments. 2 0 -45.2 4.5 4.5': CLAYEY SAND (SC), fine to medium; dark gray, trace shell fragments. 3 3 4 4 <u>-48.</u>2 – 7.<u>5</u> 7.5': SAND (SP), medium to coarse; gray, Poorly Graded, wet, trace shell fragments, and silt. 5 9 6 2 14 -52.7 + 12.012': LEAN CLAY (CL), olive green, moist, some sand, trace gravel, calcareous. 7 25 -54.2 -13.5 13.5': CLAYEY SAND (SC), fine; olive green, moist, 32 8  $-55.7 \pm 15.0$ BOTTOM OF BOREHOLE AT -55.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCU-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCU-1-88 N 358933.7753 E 2329431.953 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/1/88 10/1/88 16. ELEVATION TOP OF BORING -46.6' MLLW 6. THICKNESS OF OVERBURDEN 22.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 69.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.6-0': FAT CLAY (CH), dark gray, wet, with shell USCS fragments. 1 17 -48.1 1.5 1.5': No recovery. 12 -49.6 3.0 3': SILTY SAND (SM), fine; greenish gray, with shell fragments, and gravel, slightly calcareous. 2 17 -51.1 4.5 4.5': (CL), Fishtailed from 51.1' to 68.0'.  $-68.0 \pm 21.4$ 21.4': LEAN SILTY CLAY (CL), olive green, with shell fragments, calcareous. 3 37 -69.5<sup>±</sup> 22.9 BOTTOM OF BOREHOLE AT -69.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCU-2-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES TCU-2-88 N 357731.6345 E 2328513.166 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/1/88 10/1/88 16. ELEVATION TOP OF BORING -42.5' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.5 0': CLAYEY SAND (SC), fine to coarse; dark gray to USCS 1 -43.0 0.5 black, with shell fragments, and gravel. 0.5': LEAN SILTY CLAY (CL), olive green, 2 10 21 30 4.5': With gravel. 3 25 6': Trace sand. 4 47 -50.0 🕸 7.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** TCU-3-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCU-3-88 N 356831.6655 E 2328584.313 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 10/2/88 10/2/88 16. ELEVATION TOP OF BORING -32.6' MLLW 6. THICKNESS OF OVERBURDEN 32.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 65.1' Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.6 0': FAT CLAY (CH), dark gray to black, wet. USCS 1 0 13': Dark gray, wet. Wash cuttings: Dark grey, very fat clay 2 2 (CH) <u>-51.6 + 19.0</u> 19': Fishtailed from 51.6' to 63.6'.

**Boring Designation** TCU-3-88

COCATION COORDINATES   ELEVATION	ston Ha		SHEET OF 2 SH	2
PROJECT Charleston Harbor Entrance Channel Deepening State PI LOCATION COORDINATES  N 356831.6655 E 2328584.313 -32.6'  ELEV DEPTH OF FIELD CLASSIFICATION OF MATERIALS (Description)  19': Fishtailed from 51.6' to 63.6'. (continued)			OF 2 SH	I
Charleston Harbor Entrance Channel Deepening  LOCATION COORDINATES  N 356831.6655 E 2328584.313  FIELD CLASSIFICATION OF MATERIALS (Description)  19': Fishtailed from 51.6' to 63.6'. (continued)	ATE SYS	TEM LICEIZONITAL		IEETS
LOCATION COORDINATES  N 356831.6655 E 2328584.313  FIELD CLASSIFICATION OF MATERIALS (Description)  19': Fishtailed from 51.6' to 63.6'. (continued)		TEIVI : HORIZONTAL :	VERTICAL	
N 356831.6655 E 2328584.313 -32.6'    ELEV   DEPTH   O	harleston Harbor Entrance Channel Deepening State Plane NAD83		MLLW	
FIELD CLASSIFICATION OF MATERIALS  (Description)  19': Fishtailed from 51.6' to 63.6'. (continued)	N TOP OF	F BORING		
ELEV DEPTH OF SITE SITE SITE SITE SITE SITE SITE SITE				
19': Fishtailed from 51.6' to 63.6'. (continued)	Samp No.	REMARKS	Blows/ 0.5 ft	N-Value
-63.6 31.0  31': CLAYEY LEAN SILT (ML), olive green, with gravel, calcareous.  31 BOTTOM OF BOREHOLE AT -65.1 ft		Wash cuttings: Dark grey, very fat (CH)  BLOWS PER FOOT: Number requ		27

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** TCU-4-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES TCU-4-88 N 355561.6833 E 2328545.523 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 10/2/88 10/2/88 16. ELEVATION TOP OF BORING -27.2' MLLW 6. THICKNESS OF OVERBURDEN 33.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 60.4 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH Samp N ELEV REMARKS RQD % (Description) -27.2\_ USCS 0': FAT CLAY (CH), black, wet, `. 0 1 12': Dark gray to black, with sand, and shell fragments, slightly calcareous. 2 0 3 0

**Boring Designation** TCU-4-88 INSTALLATION SHEET **DRILLING LOG (Cont Sheet)** OF 2 SHEETS Charleston Harbor COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 355561.6833 E 2328545.523 -27.2' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH Samp **REMARKS** RQD % (Description) 0': FAT CLAY (CH), black, wet, `. (continued) 1 4 0 1 -51.2 + 24.0 24': Fishtailed from 51.2' to 58.9'. 0 -58.9 🕇 31.7 31.7': LEAN CLAYEY SILT (ML), olive green, calcareous. 5 17 -60.4 + 33.2 BOTTOM OF BOREHOLE AT -60.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** TCU-5-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCU-5-89 N 359728.3308 E 2328891.431 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/13/89 4/13/89 16. ELEVATION TOP OF BORING -36.1' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.1-0': FAT CLAY (CH), dark gray to black, slightly USCS calcareous. 0 9.4': Greenish gray. 2 6 10.5': Trace shell fragments. 3 5 13.5': Trace sand, no shell fragments. 0 4 5 <u>-55.6</u> 19.5 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCU-6-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 358873.624 E 2328919.071 TCU-6-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/13/89 4/13/89 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': FAT CLAY (CH), dark greenish gray, trace sand, USCS calcareous. 1 4 -42.9 <sup>-</sup> 1.0 1': LEAN SILTY CLAY (CL), light greenish brown, 2 some sand, calcareous. 19 3 17 43 37 4 38 28 38 5 34 -55.4 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TCU-7-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TCU-7-94 N 357088.4638 E 2328588.477 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/18/94 8/18/94 16. ELEVATION TOP OF BORING -42.6' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 James Arthur, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.6 0': SC CLAYEY SAND (SC), fine; olive gray, trace USCS gravel, slightly calcareous. 1 1 -44.1 -1.5 1.5': LEAN SANDY CLAY (CL), fine; olive gray, calcareous. 2 12 11 -47.1 4.5 4.5': CLAYEY SAND (SC), fine; olive gray, trace gravel, slightly calcareous. 3 16 18 7.5': Trace silt, and gravel. 4 17 9': No gravel. 25 27 5 -54.6 + 12.0 BOTTOM OF BOREHOLE AT -54.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-1-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES TWR-1-88 N 349143.3218 E 2331455.551 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/4/88 10/4/88 16. ELEVATION TOP OF BORING -38.9' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.9 USCS 0': FAT CLAY (CH), dark gray, with shell fragments. 0 1 4 2 <u>-46.9</u> + 8.0 8': SILTY LEAN CLAY (CL), olive gray, calcareous. 3 6 21 27 4 -50.9  $\pm$  12.0 BOTTOM OF BOREHOLE AT -50.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-10-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 346565.2756 E 2330989.984 TWR-10-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 1/25/90 1/25/90 16. ELEVATION TOP OF BORING -39' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39 0': CLAYEY SILT (MH), dark gray to black, wet. USCS Note: Most of sample #1 material was taken from side of drill rod from 39.0' to 45.3'. 0 1 -45.3 6.3 6.3': SANDY ELASTIC SILT SAND (SC), fine to 2 0 medium; dark gray and greenish gray, wet, trace -46.3 🛨 7.3 shell fragments, slightly calcareous. 3 7.3': LEAN CLAY (CL), olive green, moist, some sand, trace shell fragments, calcareous. 4 2 9': No shell fragments. 9 5 6 12 12': Trace gravel. 7 9 13.5': No gravel. 13 8 21 9 -55.5 ‡ 16.5 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-11-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 345863.3364 E 2331270.099 TWR-11-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/30/90 1/30/90 16. ELEVATION TOP OF BORING -37.7' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.7 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.7-0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 1 <u>-43.7</u>‡ 6.0 6': SILTY SAND (SM), fine to medium; dark gray to black, wet, trace clay. 2 5 7.5': SAND, fine; dark gray, trace shell fragments. 0 3 9': SAND, medium to coarse; with shell fragments, and wood. 4 4 5 9  $-49.7 \pm 12.0$ 12': CLAYEY SAND (SC), fine; dark gray, wet, some shell fragments. 6 0 -51.2 \pm 13.5 13.5': FAT CLAY (CH), dark gray, wet, some sand. 7 0 15': Trace shell fragments. 8 5 16.5': No shell fragments. 0 9 4 -58.7 ‡ 21.0 BOTTOM OF BOREHOLE AT -58.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** TWR-12-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 345449.3842 E 2331502.166 TWR-12-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 1/26/90 1/26/90 16. ELEVATION TOP OF BORING -32.9' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -32.9-0': CLAYEY SILT (MH), dark gray to black, wet. USCS NOTE: Part of sample #1 taken from 0 1 <u>-46.2</u> 2 13.3': SILTY SAND (SM), fine; dark gray, wet, some 2 shell fragments, trace clay. 3 0 9 -49.4 ± 16.5 16.5': SAND (SP), medium; gray, Poorly Graded, wet, with shell fragments, trace silt. 4 0  $-50.9 \pm 18.0$ 18': SILTY SAND (SM), fine to medium; dark gray, wet, with shell fragments. 5 9 6 2 -53.9 🕇 21.0 21': CLAYEY SAND (SC), fine to medium; dark gray, wet, trace shell fragments. 7 11  $-55.4 \pm 22.5$ BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-13-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-13-90 N 345439.3017 E 2331047.171 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/26/90 1/26/90 16. ELEVATION TOP OF BORING -39.1' MLLW 6. THICKNESS OF OVERBURDEN 16.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39.1\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 9.3 -48.4 2 9.3': SILTY SAND (SM), fine; dark gray, wet, some 2 shell fragments, trace clay. 9.5': Trace shell fragments. 3 10 -50.1<u>+</u> 11.0 11': SAND (SP), fine; gray, Poorly Graded, wet, trace shell fragments. 4 5 12.5': No shell fragments. 5 11 6 12 7 23 -55.3 16.2 -55.5 16.4 8 16.2': LEAN CLAY (CL), olive green, moist, some BLOWS PER FOOT: Number required sand, trace shell fragments, calcareous. to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -55.5 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** TWR-2-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-2-88 N 347448.3594 E 2331520.833 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/4/88 10/4/88 16. ELEVATION TOP OF BORING -38.3' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.3 0': FAT CLAY (CH), dark gray to black, wet, with USCS shell fragments. 1 0 7.5': With sand. 4 -47.3 9.0 9': SILTY LEAN CLAY (CL), olive green, with shell fragments, calcareous. 2 15 3 13 -50.3  $\pm$  12.0 BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-3-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-3-88 N 346900.2983 E 2331140.927 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/5/88 10/5/88 16. ELEVATION TOP OF BORING -38.6' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.6 0': FAT CLAY (CH), dark gray, wet. USCS 1 0 -44.0 5.4 5.4': LEAN SILTY CLAY (CL), olive green, 2 0 calcareous. 6 7.4': With shell fragments. 12 8.9': No shell fragments. 3 19 14 4 -50.6  $\pm$  12.0 BOTTOM OF BOREHOLE AT -50.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-4-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES TWR-4-88 N 346245.3121 E 2331166.036 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 10/5/88 10/5/88 16. ELEVATION TOP OF BORING -37.4' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.4\_ USCS 0': FAT CLAY (CH), dark gray to black, wet. 0 1 -43.4 6.0 6': LEAN CLAY (CL), olive green, calcareous. 2 2 7 9.1': With shell fragments. 12 3 12 12 4 <u>-50.9</u> 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-5-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-5-89 N 347726.9922 E 2331119.19 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/12/89 4/12/89 INCLINED 16. ELEVATION TOP OF BORING -39.4' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.4' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.4\_ 0': FAT CLAY (CH), dark gray to black, slightly USCS calcareous. 1 0 -44.8 5.4 5.4': CLAYEY SAND (SC), fine to medium; tannish 2 10 gray, some shell fragments, calcareous. NOTE: Began using Zeogel drilling mud at 45.4'. 3 5 -46.9 7.5 7.5': LEAN SILTY CLAY (CL), light greenish brown, some sand, trace shell fragments, calcareous. 4 22 9': No shell fragments. 23 23 5 17 23 6 -54.4<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -54.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-6-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 348500.3266 E 2331427.658 TWR-6-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/22/90 1/22/90 16. ELEVATION TOP OF BORING -34.8' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.8 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace shell fragments. 0 -48.8  $\mp$  14.0 14': FAT CLAY (CH), dark greenish gray, moist, 2 0 trace sand, and shell fragments. -49.8 🛨 15.0 15': LEAN CLAY (CL), olive green, moist, some sand. 3 9 4 8 <u>-52.8 ‡ 1</u>8.0 18': CLAYEY SAND (SC), fine; olive green, moist, calcareous. 5 13 6 14 -55.8 = 21.0 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** TWR-7-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-7-90 N 348260.4309 E 2331980.693 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 1/20/90 1/20/90 INCLINED 16. ELEVATION TOP OF BORING -36.9' MLLW 6. THICKNESS OF OVERBURDEN 18 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp **REMARKS** RQD % REC (Description) -36.9 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 -38.9 2.0 2': SILTY SAND (SM), medium to coarse; dark 2 10 gray, wet, with shell fragments, trace clay. 18 3 4 15 -42.9 6.0 6': CLAYEY SAND (SC), medium to coarse; dark gray, wet, with shell fragments. 5 1 2 -45.9 + 9.0 9': FAT CLAY (CH), dark gray, wet, trace gravel. 6 0 -48.0. \_11.1 11.1': LEAN CLAY (CL), olive green, moist, some 7 9 sand, trace gravel, calcareous. 8 18 13.5': No gravel. 9 18 10 13 -53.4  $\pm$  16.5 16.5': CLAYEY SAND (SC), fine; olive green, moist, 11 14 -54.9  $\mp$  18.0 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-8-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-8-90 N 347269.2613 E 2330966.867 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/22/90 1/22/90 16. ELEVATION TOP OF BORING -39.5' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39.5\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 1 0 2 0 -47.5 8.0 8': CLAYEY SAND (SC), fine to medium; dark gray, 3 5 wet, some shell fragments, slightly calcareous. -48.5 9.0 9': LEAN CLAY (CL), olive green, moist, some sand, trace gravel, calcareous. 5 4 5 8 12': No gravel. 6 9 -53.0 ‡ 13.5 13.5': CLAYEY SAND (SC), fine; olive green, moist, calcareous. 7 14 8 24 -56.0 1 16.5 BOTTOM OF BOREHOLE AT -56.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-9-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-9-90 N 346968.366 E 2331518.913 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/22/90 1/22/90 INCLINED 16. ELEVATION TOP OF BORING -35.8' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.8-0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace shell fragments. 0 1 2 0 -44.6<sup>‡</sup> 8.8 3 8.8': CLAYEY SAND (SC), fine to medium; olive 0 green and dark gray, moist, trace shell fragments, 4 5 9': CLAYEY SAND, fine; olive green, trace gravel, calcareous. 5 8 -47.8 = 12.0 12': LEAN CLAY (CL), olive green, moist, some sand, trace gravel, calcareous. 6 12 13.5': No gravel. 7 11 -50.8 \bigain 15.0 15': CLAYEY SAND (SC), fine; olive green, moist, 8 12 9 15 10 22 <u>-55.3</u> ± 19.5 BOTTOM OF BOREHOLE AT -55.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-17-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 358914.5579 E 2333734.882 WR-17-88 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/17/88 2/17/88 16. ELEVATION TOP OF BORING -34.8' MLLW 6. THICKNESS OF OVERBURDEN 18.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.7 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.8 0': SANDY SILT (MH), dark gray. USCS 1 0 <u>-49.2 + 14.4</u> 14.4': SANDY FAT CLAY (CH), dark gray, with shell fragments. 2 0 -51.7 16.9 16.9': SANDY LEAN CLAY (CL), yellowish green. 3 12 4 5 30 -53.7  $\pm$  18.9 BOTTOM OF BOREHOLE AT -53.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-18-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES WR-18-88 N 358196.7032 E 2334445.991 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/17/88 2/17/88 16. ELEVATION TOP OF BORING -35.5' MLLW 6. THICKNESS OF OVERBURDEN 15.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.2 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.5 0': SANDY SILT (MH), black. USCS 1 0 -42.2 6.7 6.7': SANDY FAT CLAY (CH), light green, calcareous. 2 19 3 13 10 4 5 14 16 6 7 20 BOTTOM OF BOREHOLE AT -51.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-19-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-19-88 N 364926.3148 E 2338566.761 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 14 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/18/88 2/18/88 16. ELEVATION TOP OF BORING -23.9' MLLW 6. THICKNESS OF OVERBURDEN 31.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -23.9 0': SANDY SILT (MH), black. USCS 0 -36.8 🗮 12.9 12.9': FAT CLAY (CH), dark gray, with sand, and 2 0 shell fragments. 14.9': Lenses of calcareous sand. 3 6 4 4 5 -42.1<del>丰</del>18.2 6 14 18.2': SANDY LEAN CLAY (CL), gray, calcareous. -43.1 = 19.2 19.2': SANDY FAT CLAY (CH), gray, calcareous. 7 13 8 16 9 16 10 21 11 15 12 18 13 19 14 23 -55.1= BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30".

with the Unified Soil Classification System

**Boring Designation** WR-20-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-20-88 N 364793.3931 E 2338990.775 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/17/88 2/17/88 16. ELEVATION TOP OF BORING -34.5' MLLW 6. THICKNESS OF OVERBURDEN 16.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.8 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.5 0': SANDY SILT (MH), black. USCS 0 1 -40.3 5.8 5.8': SANDY FAT CLAY (CH), light green, calcareous. 2 22 3 15 4 18 5 19 6 15 7 17 8 15 -50.8 16.3 BOTTOM OF BOREHOLE AT -50.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-21-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 366433.6456 E 2340565.455 WR-21-90 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 13 13 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/15/90 6/15/90 -28.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 27.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -28.5 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 *-*37.7∓ 9.2 9.2': LEAN CLAY (CL), olive green, moist, some 2 12 sand, calcareous. 3 12 4 11 5 11 6 15 7 12 8 12 9 14 10 13 11 20 12 25 13 26 **-**55.7∓ 27.2 BOTTOM OF BOREHOLE AT -55.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

hammer falling 30".

**Boring Designation** WR-22-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES WR-22-90 N 366570.5581 E 2340115.442 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss

	5. DIRECTION OF BORING DEG FROM BEARING		14. ELEVATION GROUND WATER NA												
VEI	RTICAL CLINED	BOF	:VEDTICAL :	15. DATE BORING STARTED COMPLETED 6/14/90 6/14/90											
6. THICKN	o. Thickness of Overborder					16. ELEVATION TOP OF BORING -37.3' MLLW									
7. DEPTH	7. DEPTH DRILLED INTO ROCK U				17. TOTAL CORE RECOVERY FOR BORING N/A										
8. TOTAL	DEPTH	OF F		18. SIGNATURE AND TITLE OF INSPECTOR     James Arthur, P.G.											
J. 10 17 12						,3 /\l		<u> </u>							
	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %		0.5 ft N-Value							
-37.3	-		0': LEAN CLAY (CL), olive green, moist, some sand, calcareous.		1		USCS	0							
	-		1.5': Moist, No fat clay.		2			13							
	-				3			15							
	-				4			20							
	-				5			15							
	-				6			14							
	-				7			14							
	-				8			13							
	-				9			13							
	-				10			16							
	-				11			25							
-55.3	18.0		16.5': Trace shell fragments.		12		PLOWO DED FOOT New towards of	30							

BOTTOM OF BOREHOLE AT -55.3 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-23-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-23-90 N 367229.5964 E 2340411.32 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/16/90 6/16/90 16. ELEVATION TOP OF BORING -19.2' MLLW 6. THICKNESS OF OVERBURDEN 36.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -19.2\_ 0': FAT CLAY (CH), gray, wet, trace sand. USCS 0 1 2 0 3 0 0 4 15.8': Trace sand, and shell fragments. 5 0 -36.5 17.3 17.3': CC LEAN CLAY (CL), olive green, moist, some sand, calcareous. 6 13 12

**Boring Designation** WR-23-90

DRILLING LOG (Cont Sheet)	Char	OF 2 SHEETS								
PROJECT	COORD		VERTICAL							
Charleston Harbor Entrance Channel Deepening	State	e Pla	NAD83	MLLW						
LOCATION COORDINATES	State Plane NAD83 MLLW ELEVATION TOP OF BORING									
N 367229.5964 E 2340411.32	-19.2'									
ELEV DEPTH D	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value				
17.3': CC LEAN CLAY (CL), olive green, moist, some sand, calcareous. (continued)		8				13				
		9				9				
		10				13				
		11				18				
		12				15				
		13				15				
29.3': Trace shell fragments.		14				18				
30.8': No shell fragments.		15				18				
		16				18				
33.8': Trace shell fragments.		17				21				
56.0 36.8		18				25				

INSTALLATION

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-24-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-24-90 N 367125.6523 E 2340696.331 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 6/17/90 6/17/90 16. ELEVATION TOP OF BORING -7.7' MLLW 6. THICKNESS OF OVERBURDEN 47.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': FAT CLAY (CH), gray, wet. USCS 0 1 2 0 15.9': Trace sand, and shell fragments, slightly calcareous. 3 0 4 0

Boring Designation WR-24-90

				_			Boring Designation	WR-24-90	
DRII	LING	LO	G (Cont Sheet)	INSTAL		SHEET 2			
PROJE			- (	Cha	OF 2 SI	HEETS			
		⊔م≖	har Entrance Channel December						
			bor Entrance Channel Deepening	Stat			NAD83	MLLV	V
LOCATI	ON COO	RDIN	ATES	ELEVAT	TON T	ГОР С	OF BORING		
N 36	7125.6		E 2340696.331	-7.7					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			0': FAT CLAY (CH), gray, wet. (continued)						
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-36.9	29.2								
			29.2': LEAN CLAY (CL), olive green, some sand.						١.
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-54.9	47.2				''				
	•		BOTTOM OF BOREHOLE AT -54.9 ft			•	BLOWS PER FOOT: Number re	auired	

BOTTOM OF BOREHOLE AT -54.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-25-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-25-90 N 367745.6922 E 2340996.216 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 18 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/18/90 6/18/90 16. ELEVATION TOP OF BORING -4.8' MLLW 6. THICKNESS OF OVERBURDEN 49.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -4.8 0': FAT CLAY (CH), gray, wet, trace sand, and shell USCS fragments. 1 0 3.3': No sand or shell fragments. 2 0 3 0 0 4 5 0

**Boring Designation** WR-25-90

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		LO	G (Cont Sheet)				Harbor STEM : HORIZONTAL :	of 2 SHEETS						
PROJEC		Harl	bor Entrance Channel Deepening		ORDI		VERTICAL							
LOCATION					State			NAD83	MLI	ИLLW				
			E 2340996.216	ELEVATION TOP OF BORING -4.8'										
			FIELD CLASSIFICATION OF MATERIALS			Š.				<b>=</b>	en			
ELEV	DEPTH	LEGEND	(Description)		% REC	Samp No.	RQD %	REMARKS	<u>B</u>	0.5 ft	N-Value			
			<b>0':</b> FAT CLAY (CH), gray, wet, trace sand, and she fragments. <i>(continued)</i>	II		6				_	0			
-38.1						7					0			
-			<b>33.3':</b> CLAYEY GRAVEL LEAN CLAY (CL), olive green, moist, some sand, calcareous.			8					12			
	- - - - - -					9					18			
	- - - - -					10					9			
	-					11					15			
						12					14			
						13					12			
	- - - - - -					14					16			
	- - - - -					15					16			
	- - - - - -					16					18			
	-					17					22			
-54.6	- - - - 49.8					18					14			
			BOTTOM OF BOREHOLE AT -54.6 ft  NOTE: Soils visually field classified in accordance with the Unified Soil Classification System					BLOWS PER FOOT: Number requi to drive 1-3/8"ID splitspoon w/140 lt hammer falling 30".	red					

**Boring Designation** WR-26-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-26-90 N 367893.612 E 2340587.2 Failing 1500 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 23 23 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/19/90 6/19/90 INCLINED 16. ELEVATION TOP OF BORING -10.4' MLLW 6. THICKNESS OF OVERBURDEN 44.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO F0,29999999999997 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -10.4-0': FAT CLAY (CH), gray, wet, trace sand, and shell USCS fragments. 0 1 2 0 -19.8 9.4 9.4': SS CLAYEY SAND (SC), fine; gray, wet, trace shell fragments. 3 0 0 4 14.6': SAND, fine to medium. 5 6  $-26.5 \pm 16.1$ 16.1': SILTY SAND (SM), fine to medium; gray, wet, some shell fragments, trace clay. 6 0  $-28.0 \mp 17.6$ 17.6': CLAYEY SAND (SC), fine to medium; gray, wet, trace shell fragments. 7 6 -29.5<del>+</del>19.1 19.1': SILTY SAND (SM), medium to coarse; gray, wet, with shell fragments, trace clay, slightly 8 3 calcareous  $-31.0 \mp 20.6$ 20.6': CLAYEY SAND (SC), medium to coarse; gray, wet, with shell fragments, slightly calcareous. 9 2 8 23.6': CLAYEY SAND, fine to medium: tannish

**Boring Designation** WR-26-90

					. =		Boring Designation	VVR-26-90	
DRILLING LOG (Cont Sheet)			INSTAL			arbor	SHEET 2 OF 2 SHEETS		
PROJE			,	COORD		VERTICAL			
		Harl	bor Entrance Channel Deepening				<u>:</u>		
	LOCATION COORDINATES					ne	F BORING	MLLW	/
						OP O	FBORING		
N 36	57893.6		E 2340587.2	-10.4					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-			gray, trace shell fragments, non-calcareous.  20.6': CLAYEY SAND (SC), medium to coarse; gray, wet, with shell fragments, slightly calcareous. (continued)  25.1': SAND, medium to coarse; gray, with shell fragments		10				19
-	26.6		fragments. <b>26.6':</b> LEAN CLAY (CL), olive green, moist, trace sand, calcareous.		12				30
					13				10
	<del>-</del>				14	-			8
-					15	-			12
					16	-			10
=					17				12
					18	-			14
					19	-			14
=					20				9
	+ + + + + + + + + +				21	_			16
					22	-			16
-55.0	44.6				23				23

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-27-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-27-94 N 359576.601 E 2335353.542 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/19/94 8/19/94 16. ELEVATION TOP OF BORING -42.2' MLLW 6. THICKNESS OF OVERBURDEN 15.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.6 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.2\_ 0': CLAYEY SILT (MH), dark gray to black. USCS 0 1 -46.6 4.4 4.4': LEAN CLAY (CL), olive gray, some sand, trace 2 0 gravel, calcareous. 4.9': SANDY, fine. 11 -48.6<sup>+</sup> 6.4 6.4': CLAYEY SAND (SC), fine; olive gray, calcareous. 3 12 16 20 4 30 25 -56.1 ‡ 13.9 13.9': LEAN SANDY CLAY (CL), olive gray, trace gravel, calcareous. 5 28 -57.6 <del>+</del> 15.4 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -57.6 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-28-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-28-94 N 365007.551 E 2338764.888 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/23/94 8/23/94 16. ELEVATION TOP OF BORING -33.1' MLLW 6. THICKNESS OF OVERBURDEN 22.9 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33.1-0': CLAYEY SILT (MH), dark gray, trace sand, and USCS shell fragments. 0 -39.5 +6.4 6.4': FAT CLAY (CH), gray. 2 2 -41.0 7.9 7.9': CLAYEY SAND (SC), fine; olive gray, trace gravel. 3 4 -42.5 + 9.4 9.4': LEAN CLAY (CL), olive gray, some sand, calcareous. 4 8 11 9 5 11 12 12 -51.5 + 18.418.4': CLAYEY SAND (SC), fine; olive gray, calcareous. 6 13 22 7 22 -56.0 ± 22.9 BOTTOM OF BOREHOLE AT -56.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30".

with the Unified Soil Classification System

**Boring Designation** WR-29-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 366126.728 E 2338898.017 WR-29-94 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/23/94 8/23/94 16. ELEVATION TOP OF BORING -40' MLLW 6. THICKNESS OF OVERBURDEN 12.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.5 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40 0': CLAYEY SILT (MH), dark gray to black, some USCS 0 1 -45.0 5.0 5': SILTY SAND (SM), fine; gray, trace clay. 2 4 -46.5 +6.5 6.5': LEAN SANDY CLAY (CL), fine; olive gray, calcareous. 9 3 13 -49.5 – 9.5 9.5': CLAYEY SAND (SC), fine; olive gray, calcareous. 4 14 5 20 -52.5 BOTTOM OF BOREHOLE AT -52.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** WR-30-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-30-97 N 359595.5101 E 2333502.244 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/19/97 6/19/97 16. ELEVATION TOP OF BORING -18' MLLW 6. THICKNESS OF OVERBURDEN 42.9 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 60.9 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -18 0': FAT CLAY (CH), dark gray, trace sand, USCS calcareous. 0 1 18.5': Dark gray, some sand. 2 0

**Boring Designation** WR-30-97

	1			Dorning i	Jesignation	VVIX-30		_
DRILLING LOG (Cont Sheet)	INSTAL		SHEET 2					
PROJECT	Cha	riest	OF 2 SHEET					
	COORD	IINAII	= 515	I EIVI	HORIZONTAL	VERTICAL		
Charleston Harbor Entrance Channel Deepening	State	e Pla	ane		NAD83	MLLW		
LOCATION COORDINATES	ELEVAT	T NOI	ГОР О	F BORING		•		
N 359595.5101 E 2333502.244	-18'							
ELEV DEPTH OF MATERIALS (Description)	% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
0': FAT CLAY (CH), dark gray, trace sand, calcareous. (continued)								
-45.9 27.9 27.9': CLAYEY SAND (SC), fine; light olive, calcareous.		3					0 2	12
29.4': Light olive, trace silt.						-	10 4 7 14	21
30.9': Trace gravel.		4				-	14 10 10	20
32.4': LEAN CLAY (CL), light olive, trace gravel, calcareous.		5					5 9 10	19
							10 11 14	25
-54.9 = 36.9							10 13 14	27
36.9': CLAYEY SAND (SC), fine; light olive, calcareous.		6				}	9 13 14	27
-57.9 = 39.9 <b>32.9</b>							8 9 12	21
39.9': LEAN CLAY (CL), light olive, some sand, calcareous.		7					6 7 9	16
41.4': CLAYEY SAND (SC), fine; light olive, calcareous.		8				ļ	5 8 13	21
POTTOM OF POPELIOLE AT 60.0 ft				DI OWE DE	D EOOT: Number re	audra d		

BOTTOM OF BOREHOLE AT -60.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-31-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-31-97 N 360997.2636 E 2334847.857 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED : VERTICAL 15. DATE BORING 6/19/97 6/19/97 16. ELEVATION TOP OF BORING -15.7' MLLW 6. THICKNESS OF OVERBURDEN 41.4' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 57.1' James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -15.7-0': FAT CLAY (CH), dark gray, trace shale USCS fragments, calcareous. 0 1 13.4': No shell fragments, non-calcareous. 0 2 19.4': Trace wood. 0 21.2': Some sand, no wood. 0 3

Boring Designation WR-31-97

					Boring Designation	n WK-31-9	<u> </u>		
DRII I ING I	OG (Cont Sheet)	INSTAL		SHEET	2				
			rlest	of 2 s	HEETS				
PROJECT		COORE	INAT	E SYS	TEM HORIZONT	TAL VERTICAL			
Charleston F	larbor Entrance Channel Deepening	Stat	e Pla	33 : MLL\	Ν				
LOCATION COORI	DINATES	ELEVATION TOP OF BORING							
N 360997.26	636 E 2334847.857	-15.	7'						
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value		
-39.1 = 23.4			- 0,						
#	23.4': SAND (SP), fine; gray, Poorly Graded, trace					0			
Ŧ	silt.		4			6	9		
-40.6 24.9	OA OL OU TV OAND (ON) "			-		3	_		
± !	24.9': SILTY SAND (SM), fine; gray.		_			1	٠,		
<del>I</del>	· <mark>[+</mark> ]		5			2	4		
<u>-42.1 + 26.4</u>	<b>26.4':</b> SAND (SP), fine to medium; gray, Poorly			1		3			
+	Graded, trace silt.		6			5	13		
-43.6 <sup>±</sup> 27.9						8	┤		
+0.0 = 27.0	27.9': CLAYEY SAND (SC), fine; olive, calcareous.			1		5			
± •/			7			9	16		
<b>+</b> •						7			
<b>#</b>	29.4': Trace shell fragments.					12			
<u> </u>						14	35		
± •	( <u>///</u>					21			
# 2	30.9': No shell fragments.					0	4 _		
王 🕏						3	8		
± •				-		5			
+ 2			8			9	20		
Ŧ <b>6</b>			"			11	- 20		
+ 2				1		7			
± 2						9	20		
-51.1 = 35.4	1/2/2 					11			
+	35.4': LEAN CLAY (CL), olive, some sand,					4			
<b>士</b>	calcareous.		9			10	22		
# /						12			
Ŧ	36.9': Trace sand.		1			6	_		
- 美			1			11	26		
± /	<b>38.4':</b> Some sand.		1			15			
+	30.4 . Suffle Saffu.					12	25		
<b>= 2</b>			1			13	- 23		
+	<b>39.9':</b> Trace sand.			1		6			
#	5515 1 11455 541141		10			8	18		
-57.1 + 41.4						10	7		
/	BOTTOM OF BOREHOLE AT -57.1 ft			-	BLOWS PER FOOT: Numb	er required	•		

BOTTOM OF BOREHOLE AT -57.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-32-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-32-97 N 362480.475 E 2336245.397 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/20/97 6/20/97 16. ELEVATION TOP OF BORING -12.9' MLLW 6. THICKNESS OF OVERBURDEN 42.1' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 55' 8. TOTAL DEPTH OF BORING James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -12.9-0': SILTY SAND (SM), fine to medium; dark gray, USCS some shell fragments, calcareous. 0 1 -22.3 + 9.4 9.4': FAT CLAY (CH), dark gray, some sand. 2 0 0 -29.2 16.3 16.3': SILTY SAND (SM), fine; gray, trace clay. 3 0 -32.3 + 19.419.4': CLAYEY SAND (SC), fine to medium; gray. 0 4 0 1 1

**Boring Designation** WR-32-97

DBII	10	C (Cont Shoot)	INSTAL		2				
		LU	G (Cont Sheet)				larbor	OF 2 SH	HEETS
PROJE				COORI	ITANIC	E SYS	STEM HORIZONTAL	VERTICAL	
1			bor Entrance Channel Deepening		e Pla		NAD83	MLLW	/
LOCAT	ON COO	RDIN	ATES	ELEVA	TION	ГОР О	DF BORING		
N 36	2480.4	_	E 2336245.397	-12.					
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			<b>19.4':</b> CLAYEY SAND (SC), fine to medium; gray. (continued)						0
-41.5	28.6		<b>28.6':</b> SAND (SP), fine to medium; light gray, Poorl Graded.	у				0	
-43 N	30.1		Graded.		5			7	23
_	t		30.1': CLAYEY SAND (SC), fine; olive, calcareous.			1		0	
-					6			0	3
-	Ė							3	
-	Ė							0	3
=	Ė.							3	
-	ŧ							3	<u> </u>
-	<del>-</del>							6	13
	Ŧ					-		5	
-	F				7			9	19
-49.0	36.1							10	
-	Ŧ		<b>36.1':</b> LEAN CLAY (CL), light olive, some sand, and silt, calcareous.	d				8	ļ ,
-	ŧ		o, oa.oa.ooao.		8			11	24
_	Ė		<b>37.6':</b> Olive, trace sand, and shell fragments.			1		6	
-	ŧ							7	17
-	<u> </u>							10	
:	Ė							6	26
	Ė							12	26
	Ė							8	
	‡				9			11	25
-55.0_	42.1		POTTOM OF PODELIOLE AT . FF 9.6				DI OWO DED EGGE NI	14	

BOTTOM OF BOREHOLE AT -55.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WR-33-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-33-97 N 363882.6031 E 2337710.0225 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/21/97 6/21/97 -15.3' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 37.2 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.5 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -15.3\_ 0': SILTY SAND (SM), fine to medium; dark gray, USCS some shell fragments, calcareous. 0 6.8': Trace clay. 0 0 1 1 0 1 2 2 4 2 -26.8 ‡ 11.5 11.5': CLAYEY SAND (SC), fine to medium; dark 0 gray, calcareous. 3 3 9 6 13': Some shell fragments. 0 1 1 0 -30.5 + 15.215.2': FAT CLAY (CH), dark gray, trace sand, and shell fragments. 0 4

**Boring Designation** WR-33-97

	INICTAL	LATIO	N.I.	Boring Designation V	VR-33-97	
DRILLING LOG (Cont Sheet)	INSTAL	ırlest	SHEET 2 OF 2 SHEETS			
PROJECT	COORDINATE SYSTEM HORIZONTAL VERTICA					
Charleston Harbor Entrance Channel Deepening	Stat	e Pla	ne	NAD83	MLLW	
LOCATION COORDINATES	ELEVATION TOP OF BORING					
N 363882.6031 E 2337710.0225	-15.	3'				
ELEV DEPTH DEPTH FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
15.2': FAT CLAY (CH), dark gray, trace sand, and shell fragments. (continued)		8				0
27.1': CLAYEY SAND (SC), fine to medium; dark gray, trace shell fragments.		5	-			0
29.7': SAND (SP), fine to medium; light gray, Poorl Graded.	у	6			9	11
30.7': LEAN CLAY (CL), olive, trace sand, and gravel, calcareous.		7	-		7 12 13	25
32.7': Some sand.		8			5 8 12	20
34.2': CLAYEY SAND (SC), fine; olive, trace grave calcareous.	I,	9			5 9 10	19
-52.5 - 37.2		10			8 16	24
BOTTOM OF BOREHOLE AT -52.5 ft  NOTE: Soils visually field classified in accordance with the Unified Soil Classification System				BLOWS PER FOOT: Number requ to drive 1-3/8"ID splitspoon w/140 hammer falling 30".	iired lb.	

**Boring Designation** WR-34-98 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-34-98 N 360005.4 E 2334273.17 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 14 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/9/98 8/9/98 16. ELEVATION TOP OF BORING -23.5' MLLW 6. THICKNESS OF OVERBURDEN 40.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 64.3 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -23.5-0': LEAN SILT (ML), gray, some shell fragments, USCS trace sand, slightly calcareous. 0 1 2.3': Shell fragments. 2 9 -27.3 3.8 3.8': FAT CLAY (CH), gray, some shell fragments. 3 0 4 4 6.9': Trace shell fragments. 5 0 6 0 7 0 0 8 16': Some shell fragments. 9 0 21.6': Trace shell fragments.

**Boring Designation** WR-34-98

						Boring Designation	<u>WR-34</u>		2
DRILLING L	.OG (Cont Sheet)	INSTALLATION SHEET Charleston Harbor OF 2 s							
PROJECT	· · · · · · · · · · · · · · · · · · ·		ORDI				: VERTIC		
Charleston F	larbor Entrance Channel Deepening	;	State	Pla	ne	NAD83	MLLW		,
LOCATION COOR	DINATES		ELEVATION TOP OF BORING						
	E 2334273.17		-23.5						
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-47.8 = 24.3	3.8': FAT CLAY (CH), gray, some shell fragments (continued)	•							
-50.7—27.2	24.3': CLAYEY SAND, fine; gray, trace shell fragments.			11					0
-52.8 29.3	27.2': Wash.								<u> </u>
-54.3 <del>+</del> 30.8	29.3': CLAYEY SAND (SC), fine; gray, some silt, trace shell fragments.			12					30
-57.8 34.3	<b>30.8':</b> Wash.								
-59.3 + 35.8	34.3': SILTY SAND (SM), fine; gray, some clay, a shell fragments, slightly calcareous.	nd		13					14
-62.8 39.3	<b>35.8':</b> Wash.								
-64.3 + 40.8	39.3': CLAYEY SAND, fine; olive gray, calcareous	i.		14					31
01.0   10.0	BOTTOM OF BOREHOLE AT -64.3 ft					BLOWS PER FOOT: Number red to drive 1-3/8"ID splitspoon w/140	quired		
	NOTE: Soils visually field classified in accordance with the Unified Soil Classification System					hammer falling 30".	J ID.		

**Boring Designation** WR-35-98 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-35-98 N 361460.54 E 2335716.41 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/9/98 8/9/98 16. ELEVATION TOP OF BORING -24.7' MLLW 6. THICKNESS OF OVERBURDEN 35.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 60' James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -24 0': FAT CLAY (CH), gray, trace silt, and shell USCS fragments. 0 1 8.1': No sand or silt. 0 2 -36.9 + 12.212.2': CLAYEY SAND (SC), fine; gray, some wood. 3 0 -38.9 14.2 14.2': SILTY SAND (SM), fine; light gray and gray, some clav. 9 4 5 8 -41.9 + 17.2 17.2': SAND (SP), fine; light gray, Poorly Graded, trace silt, and shell fragments. 6 13 <u>-43.4 ‡ 18.7</u> 18.7': SILTY SAND (SM), fine to medium; light gray, trace clay, and shell fragments. 10

							<b>Boring Designation</b>	WR-35	<u>5-98</u>	
DRII	LING	IΩ	G (Cont Sheet)	INSTA				SHEET		2
			<del>o (oom onoot)</del>	COOR	arlest	OF 2	EETS			
PROJE		Llow	har Entranas Channal Deananing	COOR	DINAI	E SYS	STEM : HORIZONTAL :	VERTIC	AL	
			bor Entrance Channel Deepening	Sta	M	MLLW				
LOCAT	ON COO	RDIN.	ATES	ELEVA	TION	TOP C	OF BORING	·		
N 36	1460.5		2335716.41	-24						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% RE	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-44.9 z	20.2		20.2': CLAYEY SAND (SC), fine; olive gray, calcareous.		8					8
-47.9	23.2				9					12
-49 4	24.7		<b>23.2':</b> LEAN CLAY (CL), olive gray, some silt, and sand, calcareous.		10					16
-53.5	28.8									
-55.0	30.3		<b>28.8':</b> CLAYEY SAND (SC), fine; olive gray, calcareous.		11					17
-	33.8		<b>30.3':</b> Wash.							
-60.0	35.3		<b>33.8':</b> LEAN CLAY (CL), olive gray, some silt, trace sand, calcareous.		12					38
	, 55.5	11/	BOTTOM OF BOREHOLE AT -60.0 ft			1	BLOWS PER FOOT: Number rec	quired		
			NOTE: Soils visually field classified in accordance				to drive 1-3/8"ID splitspoon w/14/hammer falling 30".	θlb.		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WR-36-98 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WR-36-98 N 362886.63 E 2337149.28 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 8/10/98 8/10/98 16. ELEVATION TOP OF BORING -23.4' MLLW 6. THICKNESS OF OVERBURDEN 40.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.8 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -23.4 0': SILTY SAND (SM), fine; gray, some shell USCS fragments, slightly calcareous. 0 1 3.1': Trace clay, and shell fragments. 2 0 9': Some clay. 3 0 0 0

**Boring Designation** WR-36-98 INSTALLATION SHEET **DRILLING LOG (Cont Sheet)** Charleston Harbor 2 SHEETS COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 **MLLW** LOCATION COORDINATES **ELEVATION TOP OF BORING** N 362886.63 E 2337149.28 -23.4' N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV **DEPTH** Samp **REMARKS** RQD % (Description) 0': SILTY SAND (SM), fine; gray, some shell fragments, slightly calcareous. (continued) 24.1': Some clay, and shell fragments. 6 11 -49.0<sup>±</sup> 25.6 25.6': Wash. -52.5 29.1 **29.1':** SAND (SP), medium to coarse; gray, Poorly Graded, some shell fragments. 7 9  $-54.0 \mp 30.6$ 30.6': Wash. <u>-57.3  $\pm$  33.9</u> 33.9': LEAN CLAY (CL), olive gray, some silt, and sand, calcareous. 8 26  $-58.8 \pm 35.4$ 35.4': Wash.

BOTTOM OF BOREHOLE AT -63.8 ft

sand, calcareous.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

38.9': LEAN CLAY (CL), olive gray, some silt, and

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

 $-62.3 \pm 38.9$ 

 $-63.8 \pm 40.4$ 

9

24

**Boring Designation** WRB-1-81 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-1-81 N 358479.862 E 2333795.286 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/11/81 5/11/81 16. ELEVATION TOP OF BORING -35' MLLW 6. THICKNESS OF OVERBURDEN 23.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 58.5 8. TOTAL DEPTH OF BORING Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35 0': No recovery.  $-45.0 \pm 10.0$ 10': SILTY SAND (SM), fine to medium; black. 1 3  $-46.5 \pm 11.5$ 11.5': LEAN SILT (ML), gray, with sand. 2 3 3 3 -49.5 ± 14.5 14.5': SILTY FAT CLAY (MH), gray. 4 11 5 12 <u>-58.5 ± 23</u>.5 BOTTOM OF BOREHOLE AT -58.5 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WRB-10-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-10-81 N 362130.481 E 2337634.587 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/14/81 5/14/81 16. ELEVATION TOP OF BORING -45' MLLW 6. THICKNESS OF OVERBURDEN 8.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45 0': ORGANIC SILT (OH), black. USCS 0 -50.5 5.5 5.5': MH SILTY FAT CLAY (MH), green. 1 11 12 BOTTOM OF BOREHOLE AT -53.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-11-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-11-81 N 362020.508 E 2337764.603 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/18/81 5/18/81 16. ELEVATION TOP OF BORING -38' MLLW 8' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38 0': ORGANIC SILT (OH), black. USCS 0 -40.0<u>+</u> 2.0 2': SILTY FAT CLAY (MH), gray. 1 9 2 11 12 3 11

BOTTOM OF BOREHOLE AT -46.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

<u>-46.0  $\pm$ </u>

8.0

**Boring Designation** WRB-12-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES WRB-12-81 N 362990.562 E 2338184.427 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Parden 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/20/81 5/20/81 16. ELEVATION TOP OF BORING -41.5' MLLW 5' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46.5' Thomas W. Scott

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-46.5_ - - - -43.5			0': ORGANIC SILT (CH), black.				USCS		0
- - - - -			2': CLAYEY FAT SILT (MH), green.		1				8
-46.5	<del>-</del> - -				2				12

BOTTOM OF BOREHOLE AT -46.5 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

Boring Designation WRB-13-81

DRILLING LOG South Atlantic Division South Atlantic Division South Atlantic Division Charleston Harbor South Carolina NAD83 SHEET 1 OF 1 SHEETS

1. PROJECT South Carolina NAD83 MLLW

Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW

10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail

2. HOLE NUMBER LOCATION COORDINATES WRB-13-81 N 362870.589 E 2338314.445 CME 45

Charleston Harbor E	ntrance Channel Deep	pening	State Plane - South	Carolina NAD83	MLLW					
	·	· ·	10. SIZE AND TYPE OF BIT	1-3/8" Splitspoon	w/ 5 1/2" Fishtail					
	LOCATION COORDINATES		11. MANUFACTURER'S DES	SIGNATION OF DRILL						
WRB-13-81	N 362870.589 E 23	338314.445	CME 45							
3. DRILLING AGENCY			12. TOTAL SAMPLES	DISTURBED	UNDISTURBED					
U.S. Corps of Engine	ers - Savannah Distri	ct	2 2 0							
4. NAME OF DRILLER			13. TOTAL NUMBER CORE	BOXES 0	•					
Perry Roundtree			14. ELEVATION GROUND WATER NA							
5. <u>DIRECTION</u> OF BORING	: DEG FROM	BEARING		•	- COMPLETED					
	VERTICAL		15. DATE BORING	STARTED 5/20/81	COMPLETED 5/20/81					
6. THICKNESS OF OVERBUR	RDEN 4'	•	16. ELEVATION TOP OF BO	ring -46' MLL	.Ŵ					
7. DEPTH DRILLED INTO RO	CK 0'		17. TOTAL CORE RECOVER	RY FOR BORING N/A	4					
			18. SIGNATURE AND TITLE	OF INSPECTOR						
8. TOTAL DEPTH OF BORING	50'		Thomas W. Scott							

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-46 _ - -47.0	1.0		0': SILT (OH), black.				USCS		0
-	-		1': CLAYEY FAT SILT (MH), green.		1				9
-50.0	4.0				2				10
			BOTTOM OF BOREHOLE AT -50.0 ft				BLOWS PER FOOT: Number required		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID

splitspoon w/140 lb. hammer falling 30".

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-14-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-14-81 N 362750.614 E 2338434.463 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/18/81 5/18/81 16. ELEVATION TOP OF BORING -43' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43 USCS 0': ORGANIC SILT (OH), black. 0 1 -47.5 -4.5 4.5': SILTY FAT CLAY (MH), green. 2 10 3 3 -50.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.5 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-15-81

							Boring Designation	WRB-	<u>15-8</u>	<u>1</u>	
DRILLING LO	20	DIVISION	INS	STALL	ATIO	N		SHEET	•	1	
DRILLING LO	JG	South Atlantic Division	(	Char	lesto	on H	arbor	OF 1	SH	EETS	
1. PROJECT			9. (	COOF	DINA	TE S	YSTEM	VERTIO	CAL		
Charleston Harb	or Entr	ance Channel Deepening	;	State	Pla	ne -	South Carolina NAD83	. M	LLW		
		, -	10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
2. HOLE NUMBER WRB-15-81		CATION COORDINATES I 363610.697 E 2338999.301	11. MANUFACTURER'S DESIGNATION OF DRILL CME 45								
	ngineer	s - Savannah District	12.	TOT	AL SA	MPLE 2	DISTURBED 2	UNDIST	JRBED 0	)	
4. NAME OF DRILLER			13.	TOT	AL NU	JMBEI	R CORE BOXES 0	•			
Perry Roundtree 5. DIRECTION OF BORI		: DEG FROM : BEARING	14.	ELE	/ATIC	N GR	OUND WATER NA				
S. DIRECTION OF BORI	NG	VERTICAL	15. DATE BORING STARTED COMPLETED 5/20/81 5/20/81								
6. THICKNESS OF OVE	RBURDE	N 4'	16. ELEVATION TOP OF BORING -44' MLLW								
7. DEPTH DRILLED INT	O ROCK	0'					ECOVERY FOR BORING N/A				
8. TOTAL DEPTH OF BORING 48'							ID TITLE OF INSPECTOR  W. Scott				
ELEV DEPTH G		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
-44 -45.0	<b>0':</b> No re	ecovery.					USCS			0	
-46.5 + 2.5	1': SILT	Y SAND (SM), fine to medium; green.			1					13	
<del>-</del> + + + + + + + + + + + + + + + + + + +	<b>2.5':</b> CL	AYEY FAT SILT (MH), green.			2					17	
-48.0	BOTTO	M OF BOREHOLE AT -48.0 ft					BLOWS PER FOOT: Number r	equired			

BOTTOM OF BOREHOLE AT -48.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-16-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CME 45 WRB-16-81 N 364455.767 E 2339494.143 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/20/81 5/20/81 16. ELEVATION TOP OF BORING -24' MLLW 6. THICKNESS OF OVERBURDEN 27' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -24 0': No recovery. USCS 0  $-36.0 \pm 12.0$ 12': CLAYEY FAT SILT (MH), gray. 1 4 2 7 17 3 23 17 12 11 4 8 11 5 12 <u>-51.0</u> <u></u>27.0 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID nlitspoon w/140 lb. hammer falling 30'

**Boring Designation** WRB-17-81 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-17-81 N 363030.545 E 2338099.422 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/20/81 5/20/81 16. ELEVATION TOP OF BORING -36.5' MLLW 6. THICKNESS OF OVERBURDEN 9.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -36.5 0': ORGANIC SILT (OH), black, and sand. USCS 0 1 -40.0 \(\psi\) 3.5 3.5': CLAYEY FAT SILT (MH), gray. 2 1 7 3 4 12 5 11 -46.0<sup>∓</sup> 9.5 BOTTOM OF BOREHOLE AT -46.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-18-81 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-18-81 N 360905.221 E 2336059.83 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/13/81 5/13/81 16. ELEVATION TOP OF BORING -34.5' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 47.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.5\_ 0': ORGANIC SILT (OH). USCS 1 0 <u>-41.5</u> 7.0 7': SILTY SAND (SM), fine to medium; gray. 11 2 15 3 15 18 <u>-47.5  $\pm$  13.</u>0 BOTTOM OF BOREHOLE AT -47.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-2-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-2-81 N 358849.876 E 2333920.222 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/12/81 5/12/81 16. ELEVATION TOP OF BORING -33' MLLW 6. THICKNESS OF OVERBURDEN 18.5 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.5 Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33 0': ORGANIC SILT (OH), black. USCS 0 1 -48.5 ‡ 15.5 15.5': SILTY SAND (SM), fine to medium; gray. 7 2 11 -51.5 ‡ 18.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -51.5 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-20-81 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-20-81 N 337031.463 E 2340488.892 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING COMPLETED : VERTICAL 15. DATE BORING 5/22/81 5/22/81 16. ELEVATION TOP OF BORING -14' MLLW 6. THICKNESS OF OVERBURDEN 36' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH Samp N ELEV REMARKS RQD % (Description) -14 0': ORGANIC SILT (OH), black. USCS 0 -30.0 <del>+</del> 16.0 16': CLAYEY FAT SILT (MH), green. 1 2 14 14

**Boring Designation** WRB-20-81

		,			Boring Designation	WRB-20-8				
DRILLING LO	G (Cont Sheet)	INSTALI	SHEET 2							
PROJECT		COORD		OF 2 SHEE						
	rbor Entrance Channel Deepening				<u> </u>					
		State			NAD83	MLLW	<u> </u>			
OCATION COORDIN	NATES	ELEVATION TOP OF BORING								
	E 2340488.892	-14'								
ELEV DEPTH 9	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value			
=	16': CLAYEY FAT SILT (MH), green. (continued)									
<b>圭</b>										
‡ 🔳			2				12			
並 ■										
‡ 🔳	22': With gravel.									
並 ■			3				10			
‡										
Ⅰ Ⅱ	23.5': CLAYEY FAT SILT.									
‡ 🚻			4				1			
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<b>± 1</b>			°				18			
				-						
50.0 + 36.0	BOTTOM OF BOREHOLE AT -50.0 ft				BLOWS PER FOOT: Number red	quired	Щ			
					to drive 1-3/8"ID splitspoon w/140	0 lb.				
	NOTE: Soils visually field classified in accordance				hammer falling 30".					

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

hammer falling 30".

**Boring Designation** WRB-3-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-3-81 N 359190.055 E 2334935.144 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 5/12/81 5/12/51 16. ELEVATION TOP OF BORING -30.9' MLLW 6. THICKNESS OF OVERBURDEN 14.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 45' Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.9\_ 0': No recovery.. -35.0 4.1 4.1': SILT (OH), black. 2 1 2 1 -39.0 8.1 8.1': SILTY FAT CLAY (MH), gray. 3 11 4 12 10 5 6 11 45.0 BOTTOM OF BOREHOLE AT -45.0 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-4-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-4-81 N 359310.029 E 2334810.127 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/12/81 5/12/81 -32.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 17.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Thomas W. Scott N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.5 0': No recovery. USCS 0 -42<u>.5</u> + 10.0 10': SILT (OH), black. 1 5 <u>-44.0</u> ‡ 11.5 11.5': SILTY SAND (SM), fine to medium; gray. 2 8 3 1 7 3 <u>-50.0</u>  $\pm$  17.5 BOTTOM OF BOREHOLE AT -50.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-5-81 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CME 45 WRB-5-81 N 359920.161 E 2335605.007 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/13/81 5/13/81 -32.5' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 18.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51' Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.5-0': No recovery. USCS 0 -48.0 ‡ 15.5 15.5': SILTY ORGANIC SAND (OH). 9 1 -49.5 + 17.017': SILTY SAND (SM), fine to medium; gray. 2 15 -51.0 \pm 18.5 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-6-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 360690.269 E 2336294.862 WRB-6-81 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING VERTICAL DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/14/81 5/14/81 16. ELEVATION TOP OF BORING -32' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32 0': No recovery. USCS -36.5  $\mp$ 4.5 0 -42.5 ‡ 10.5 10.5': ORGANIC SILT (OH), black. 2 2 3 3 15': SILTY SAND (SM), fine to medium; gray. 3 5 4 11 <u>-50.0</u>‡ 18.0 BOTTOM OF BOREHOLE AT -50.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-7-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-7-81 N 360556.296 E 2336424.88 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/13/81 5/13/81 16. ELEVATION TOP OF BORING -31' MLLW 6. THICKNESS OF OVERBURDEN 15.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 46.5' 8. TOTAL DEPTH OF BORING Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -31 0': ORGANIC SILT (OH), soft; black. USCS 0 1 -40.5 \( \frac{1}{2} \) 9.5 9.5': SILTY FAT CLAY (MH), gray. 2 11 3 15 4 9 5 11 -46.5 🕇 15.5 BOTTOM OF BOREHOLE AT -46.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** WRB-8-81 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-8-81 N 361390.284 E 2336464.739 **CME 45** 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 5/14/81 5/14/81 16. ELEVATION TOP OF BORING -37' MLLW 14' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51 Thomas W. Scott N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37 0': No recovery. USCS 0  $-42.0 \pm 5.0$ 5': SILTY SAND (SM), fine to medium; green. 5 1 -43.5 🖵 6.5 6.5': SILTY FAT CLAY, green. 2 11 3 14 4 15 5 15 6 12 -51.0 <del>+</del> 14.0 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS hammer falling 30". PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

CHDVC-28-1-1-86

							Boring Designation	CUDA		3- I-		
DRILLING L	OG	DIVISION South Atlantia Division		STALL			orbor	SHEE		1		
1. PROJECT		South Atlantic Division					arbor YSTEM	OF VERTI	1 SH	EEIS		
	or Entr	ance Channel Deepening	,	State	Pla	ne -	South Carolina NAD83		/ILLW	'		
				-			OF BIT					
2. HOLE NUMBER		CATION COORDINATES  J 344715.8231 E 2339267.244					ER'S DESIGNATION OF DRILL 500 Vibracore					
3. DRILLING AGENCY	00 : IN	1 07-1 10.0201 L 2009201.244		TOTA				UNDIST	URBEI	)		
Ocean Surveys.	, Inc.			3 3 0								
4. NAME OF DRILLER DMB			13. TOTAL NUMBER CORE BOXES 0									
5. DIRECTION OF BOR	ING	DEG FROM BEARING	14.	ELE	/ATIO	N GR	COUND WATER NA	0145: ==				
		VERTICAL	15.	DATE	BOF	RING	STARTED C 8/12/86	OMPLETE 8/1	2/86			
6. THICKNESS OF OVE	RBURDE	n 15.8'	_				P OF BORING -40.3' MLLW RECOVERY FOR BORING 80%	<u> </u>				
7. DEPTH DRILLED INT	O ROCK	0'					ND TITLE OF INSPECTOR					
8. TOTAL DEPTH OF BO	ORING	56.1'			I/A		T			ı,		
ELEV DEPTH GE P		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-40.3	0': SILT	Y SAND (SP-SM), fine; light gray.										
1 ‡												
<b>1</b> ± <b>1</b>							Start Time: 8:27 Stop Time: 8:29					
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1 +												
1 +												
<b>1</b>												
‡					1							
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49.6												
-48.6 8.3	8.3': SAI	ND (SP), fine to medium; gray.										
		, ,										
‡ 🛄												
					2							
‡ 🗾												
<b> </b>												
‡ 📴	12.2'· Sh	nell fragments.										
<b>† </b>	12.2.01	ы паушень.										
± -56.1 ± 15.8												
	BOTTO	M OF BOREHOLE AT -56.1 ft		<u> </u>		I	I			l		
	NOTF: S	Soils visually field classified in accordance	<b>;</b>									
		Unified Soil Classification System										
					3							

**Boring Designation** CHDVC-29-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 342384.2744 E 2341525.638 CHDVC-29-1-1-86 : OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 DMB 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/8/86 8/8/86 16. ELEVATION TOP OF BORING -35.2' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.2-0': CLAYEY SILT (MH), black, with organics. Start Time: 17:14 Stop Time: 17:15 1 5.2 -40.4 5.2': SANDY CLAY (CL), gray, with shell fragments. Penetrometer - 0.2 TSF 2 -47.4 12.2 12.2': CLAYEY SAND (SC), fine; gray. 3 -51.4 + 16.2 16.2': SILTY SAND (SP-SM), fine; dark olive, calcareous (Cooper Marl). Penetrometer - 1.10 TSF 4  $-55.2 \pm 20.0$ BOTTOM OF BOREHOLE AT -55.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-30-1-1-86

10. SIZE AND TYPE OF BIT  2. HOLE NUMBER LOCATION COORDINATES CHDVC-30-1-1-86 N 341503.2925 E 2341566.792  3. DRILLING AGENCY Ocean Surveys., Inc.  4. NAME OF DRILLER DMB  5. DIRECTION OF BORING STARTED  10. SIZE AND TYPE OF BIT  11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore  12. TOTAL SAMPLES DISTURBED UNDISTUR 4 0  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED COMPLETED COMPLETED	AL LW								
Charleston Harbor Entrance Channel Deepening  State Plane - South Carolina NAD83  10. SIZE AND TYPE OF BIT  11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore  3. DRILLING AGENCY Ocean Surveys., Inc.  12. TOTAL SAMPLES DISTURBED UNDISTUR  4 0  13. TOTAL NUMBER CORE BOXES DISTURBED 14. ELEVATION GROUND WATER NA  STARTED COMPLETED C	RBEC								
10. SIZE AND TYPE OF BIT  2. HOLE NUMBER	RBEC								
2. HOLE NUMBER LOCATION COORDINATES CHDVC-30-1-1-86 N 341503.2925 E 2341566.792  3. DRILLING AGENCY Ocean Surveys., Inc.  4. NAME OF DRILLER DMB  5. DIRECTION OF BORING  DEG FROM STARTED  11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore  12. TOTAL SAMPLES DISTURBED UNDISTUR 4 0  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  COMPLETED COMPLET									
3. DRILLING AGENCY Ocean Surveys., Inc.  4. NAME OF DRILLER DMB  5. DIRECTION OF BORING DEG FROM STARTED  12. TOTAL SAMPLES DISTURBED UNDISTUR 4 0  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED COMPLET									
4. NAME OF DRILLER  DMB  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED  COMPLETED  13. TOTAL NUMBER CORE BOXES 0  14. ELEVATION GROUND WATER NA  STARTED COMPLETED	`	)							
DMB  5. DIRECTION OF BORING  STARTED  STARTED  COMPLETED									
5. DIRECTION OF BORING DEG FROM BEARING  STARTED COMPLETED  COMPLE	<u> </u>								
I IXIVERTICAL : VERTICAL : I STARTED COMPLETED									
inclined 15. Date Boring 8/11/86 8/11/8									
6. THICKNESS OF OVERBURDEN 18.8'  16. ELEVATION TOP OF BORING -34.2' MLLW									
7. DEPTH DRILLED INTO ROCK 0' 17. TOTAL CORE RECOVERY FOR BORING 94% 18. SIGNATURE AND TITLE OF INSPECTOR									
8. TOTAL DEPTH OF BORING 53' N/A									
ELEV DEPTH G FIELD CLASSIFICATION OF MATERIALS % G REMARKS	0.5 ft	N-Value							
(Description)		ż							
U: CLAYEY SILT (MH), black, with organics.									
Start Time: 12:46									
Stop Time: 12:47									
	ŀ								
39.9 5.7 5.7 5.7 5.7 SILTY SAND (SM), fine; gray, with 1" to 2"									
thick lenses of clay about 10" apart.									
	ŀ	$\overline{}$							
<b>I</b>									
<b>│</b>									
【									
<b>I</b>									
-47.6 + 13.4   + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +									
13.4': CLAYEY SAND (SC), medium; gray, with.									
	-								
-51.6 + 17.4 <b>///</b>									
17.4': SILTY CLAYEY SAND (SC-SM), fine; olive, calcareous (Cooper Marl).	}								
-53.0 + 18.8   1   calcareous (Cooper Mari).									
BOTTOM OF BOREHOLE AT -53.0 ft									
NOTE: Soils visually field classified in accordance									
I was a straight and the straight of the strai									
with the Unified Soil Classification System									
with the Unified Soil Classification System		1							
with the Unified Soil Classification System									
with the Unified Soil Classification System									
with the Unified Soil Classification System									

**Boring Designation** CHDVC-31-1-1-86 INSTALLATION South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 

DISTURBED

0

UNDISTURBED

0

11. MANUFACTURER'S DESIGNATION OF DRILL

OSI Model 1500 Vibracore

4

13. TOTAL NUMBER CORE BOXES

10. SIZE AND TYPE OF BIT

12. TOTAL SAMPLES

**DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/11/86 8/11/86 -34.7' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.7-0': CLAYEY SILT (MH), black, with organics. USCS 1 Start Time: 14:11 Stop Time: 14:12 -39.2 4.5 4.5': SILTY SAND (SP-SM), fine; gray, with 1" to 2" layers of clay every 6-10". 2 3 -45.7 = 11.0 11': CLAYEY SAND, gray, with organics, with 1/16" to 1" layers of sand every 4-5". Penetrometer - 0.25 TSF to 0.50 TSF 4

DIVISION

: LOCATION COORDINATES

BOTTOM OF BOREHOLE AT -54.7 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

N 340743.2598 E 2341346.926

**DRILLING LOG** 

CHDVC-31-1-1-86

Ocean Surveys., Inc.

1. PROJECT

2. HOLE NUMBER

3. DRILLING AGENCY

4. NAME OF DRILLER

 $-54.7 \pm 20.0$ 

**Boring Designation** CHDVC-32-1-1-86

DRILLING	ı og	DIVISION			TALL			Dorning Doorgination (	SHEE	T ·	1		
	LUG	South Atlantic Division		Charleston Harbor					OF 1 SHEETS				
1. PROJECT Charleston Ha	arhor Ent	rance Channel Deer		9. COORDINATE SYSTEM : VERTICAL State Plane - South Carolina NAD83 : MLL							,		
Charleston Harbor Entrance Channel Deepening					10. SIZE AND TYPE OF BIT								
2. HOLE NUMBER LOCATION COORDINATES CHDVC-32-1-1-86 N 342519.6489 E 2343525.607					11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore								
3. DRILLING AGENCY Ocean Surveys., Inc.					12. TOTAL SAMPLES DISTURBED UNDISTURBED 4 0								
4. NAME OF DRILLER					13. TOTAL NUMBER CORE BOXES 0								
DMB 5. DIRECTION OF BORING DEG FROM BEARING					14. ELEVATION GROUND WATER NA								
VERTICAL VERTICAL					15. DATE BORING STARTED COMPLETED 8/11/86 8/11/86								
6. THICKNESS OF OVERBURDEN 20'						16. ELEVATION TOP OF BORING -36.4' MLLW							
7. DEPTH DRILLED I	NTO ROCK	0'	<u>L</u>	17. TOTAL CORE RECOVERY FOR BORING 100%  18. SIGNATURE AND TITLE OF INSPECTOR									
8. TOTAL DEPTH OF BORING 56.4'					N/A								
ELEV DEPTH 9		FIELD CLASSIFICATION (			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-36.4		YEY SILT (MH), gray, w	rith shell fragments,	$\pm$		Ø							
<u> </u>	Alternat	ting layers of gray silty fi 4" to 1'.	ne sand. Layers vary	'				Start Time: 17:08					
<b>=</b>								Sotp Time: 17:09					
重													
+													
<b>基</b>													
‡						1							
<b>+</b>													
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<b>=</b>	± <b>11</b>					2							
<b>+</b>													
1 1													
<b>#</b>													
Ī													
<u> </u>													
-50.5 <u>+</u> 14.1													
1 111		SILTY SAND (SP-SM), co	parse; gray, with	٦		3							
1 +	shell fra	agments.											
l ‡ <b>•</b>													
-54.3 = 17.9	<b>17.9</b> ': S	SANDY CLAY (CL), gray,	with 1/2" intervals	$\dashv$									
	of medi	um sand and shell hash	every 1" to 5".										
						4							
-56.4 = 20.0	BOTTC	OM OF BOREHOLE AT -	-56.4 ft										
		Soils visually field classi Unified Soil Classification											

N/A

1. PROJECT  Charleston Harbor Entra	nce Channel Deep	pening	9. COORDINATE SYSTEM State Plane - Sou	ท th Carolina NAD83	VERTICAL MLLW						
		· ·	10. SIZE AND TYPE OF B	SIT	•						
2. HOLE NUMBER LOCA CHDVC-33-1-1-86 N	ATION COORDINATES 341495.53 E 234	2830.79	11. MANUFACTURER'S I								
3. DRILLING AGENCY			12. TOTAL SAMPLES	DISTURBED	UNDISTURBED						
Ocean Surveys., Inc.			4 4 0								
4. NAME OF DRILLER			13. TOTAL NUMBER CORE BOXES 0								
DMB			14. ELEVATION GROUND	WATER NA							
5. DIRECTION OF BORING  VERTICAL  INCLINED	DEG FROM VERTICAL	BEARING	15. DATE BORING	STARTED 8/15/86	COMPLETED 8/15/86						
6. THICKNESS OF OVERBURDEN	20'	•	16. ELEVATION TOP OF BORING -39.4' MLLW								
7. DEPTH DRILLED INTO ROCK	0'		17. TOTAL CORE RECOV	ERY FOR BORING 98%	)						
			18. SIGNATURE AND TITLE OF INSPECTOR								

N-Value Samp No. Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH REMARKS å% (Description) -39.4-0': CLAYEY SILT (MH), black, with organics. USCS 1 Start Time: 16:29 Stop Time: 16:30 -42.6 - 3.2 **3.2':** SILTY CLAYEY SAND (SC), gray, and shell fragments, Alternating 1/8" to 5" layers of gray silty clay. 2 Penetrometer - 0.25 TSF to 1.25 TSF 3 4  $-59.4 \pm 20.0$ BOTTOM OF BOREHOLE AT -59.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

59.4'

8. TOTAL DEPTH OF BORING

**Boring Designation** CHDVC-34-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CHDVC-34-1-1-86 : N 339591.3823 E 2341934.126 OSI Model 1500 Vibracore 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0

13. TOTAL NUMBER CORE BOXES

14. ELEVATION GROUND WATER

16. ELEVATION TOP OF BORING

15. DATE BORING

0

8/15/86

NA

-30.5' MLLW

COMPLETED

8/15/86

6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH ELEV Samp REMARKS RQD % (Description) -30.5 0': CLAYEY SILT (ML), black, with organics. USCS 1 Start Time: 10:13:00 Stop Time: 10:13:51 -33.7 3.2 3.2': SILTY SAND (SP-SM), fine; gray. 2 3 4  $-50.5 \pm 20.0$ BOTTOM OF BOREHOLE AT -50.5 ft

4. NAME OF DRILLER

☑ VERTICAL

5. DIRECTION OF BORING

DEG FROM

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

VERTICAL

BEARING

**DMB** 

**Boring Designation** CHDVC-35-1-1-86

DRILLING LOG South Atlantic Division  1. PROJECT				INST					SHEET	T ′	1
							arbor YSTEM :	OF 1		IEETS	
	rbor Ent	rance Channel Deep						South Carolina NAD83		CAL 1LLW	,
		·						OF BIT			
2. HOLE NUMBER CHDVC-35-1-1	1-86 1	OCATION COORDINATES N 339740.4255 E 23	342172.099	05	SIN	Nod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY Ocean Surveys				12. T	OTA	L SA	MPLE 4	ES DISTURBED U	UNDIST	URBED	)
4. NAME OF DRILLER				13. T	ОТА	L NU		R CORE BOXES 0			
DMB 5. DIRECTION OF BO	RING	DEG FROM	BEARING	14. El	LEV	ATIO	N GR	OUND WATER NA			
VERTICAL INCLINED		VERTICAL		15. D				8/15/86	MPLETE 8/15	D 5/86	
6. THICKNESS OF OV	/ERBURDE	EN 20'	-					P OF BORING -30.3' MLLW			
7. DEPTH DRILLED IN	NTO ROCK	( 0'	<u>L</u>					ECOVERY FOR BORING 100%  ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF I	BORING	50.3'		10. 0.		I/A	\ <u> </u>				
ELEV DEPTH E		FIELD CLASSIFICATION (Description		R	% EC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-30.3	0': SAN	IDY SAND (SM), fine, bla	ack, with 1" to 2"	+	$\dashv$	Ø				$\overline{}$	
<u> </u>	thick lay	yers of black organic clay " to 10".	ey silt occurring					Ct-+ Time: 40:40			
	0.0., =	10 10 .						Start Time: 10:49 Stop Time: 10:50		.	
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<b>│</b>	A									.	
<b>I</b>	A									.	
<b>│</b>	A					1				.	
<b>l</b>					+					,	
<b>│</b>	<mark>.</mark>									.	
<b>│</b>	<u> </u>									.	
-38.0 = 7.7	A									.	
# 17	7.7': SII	LTY SAND (SP-SM), gra	īy.	$\neg$						.	
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l 🛊 📘					-						
ļ ‡ 📑										.	
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l 🛔 📘										.	
l ‡ 🚺										.	
-45.1 <del> </del> 14.8						3				,	
+ 17.5	<b>14.8</b> ': C	CLAYEY SAND (ML), gra	y, with 1" to 2" thick	$\dashv$	}	,					
l 📱 🔢	layers o	of coarse sand within 1" t	o 9" of each other.							.	
l 🛊 🔢										.	
i 🛊 🔢										.	
l 🛓 🔢										.	
										.	
★ ■						4				ı	
-50.3 = 20.0	BOTTO	OM OF BOREHOLE AT -	50 3 ft			•					
		Soils visually field classification									
			•								

Boring Designation CHDVC-36-1-1-86

								DUIII	ig Des	signation			
DRILLING L	OG	South Atlantic Di		INST/				arbor			SHE		1 IEETS
1. PROJECT		Oddin Adamic Di		9. CO	OR	DINA	TE S	YSTEM			VER	ICAL	
Charleston Harb	or Entr	ance Channel Dee							Carolina	a NAD83		MLLW	/
2. HOLE NUMBER	:100	CATION COORDINATES						OF BIT	ICNATION	N OF DRILL			
		I 340503.5828 E 2						500 Vib		VOI DIVILL			
3. DRILLING AGENCY	Ina		,	12. TC	ATC	L SA		S	DI	STURBED	UNDIS		D
Ocean Surveys., 4. NAME OF DRILLER	, inc.			13 T(	<b>ΣΤ</b> Δ	L NILI	4 IMBE	R CORE I	ROYES	0	<b>:</b>	0	
DMB								OUND W		NA			
5. DIRECTION OF BOR	ING	DEG FROM VERTICAL	BEARING						STARTE		COMPLET		
INCLINED			:	15. D/						/14/86		14/86	
6. THICKNESS OF OVE	RBURDE	N 20'	_					P OF BOI		-37.7' M			
7. DEPTH DRILLED INT	O ROCK	0'	L						OF INSPE	ORING 1009	<u>′o</u>		
8. TOTAL DEPTH OF BO	ORING	57.7'				l/A			0				
ELEV DEPTH G	I	FIELD CLASSIFICATION (Descriptio		RE	% EC	Samp No.	RQD %		F	REMARKS		Blows/ 0.5 ft	N-Value
-37.7_	<b>0'</b> : CLAY	YEY SILT (MH), gray, v	vith organics, with			1		USCS					
<u> </u>	1/16" to	1/4" thick layers of san	d every 1/2" to 3".		-	'							
<b> </b>													
<b>=</b>									me: 13:4 me: 13:4				
+									ometer -				
<b>= 11</b>													
-42.5													
± **/*/	4.8': SIL' (Cooper	TY SAND (SC-SM), fir	e; olive, calcareous			2							
	(Cooper	iviaii).			-	_							
								Penetro	ometer -	1.5 TSF			
					f	3							
					-								
***************************************													
± 45.0													
-52.7 = 15.0 <b>(*/</b> / <b>/</b> /	<b>15'</b> : CLA	YEY SANDY SILT (MI	H), olive, calcareous	$\dashv$	ŀ	_							
<b>‡</b>	(Cooper	Marl).			-	4							
<b>= 11</b>													
<b></b>													
+													
<b>基</b>													
-57.7 = 20.0													
	BOTTO	M OF BOREHOLE AT	-57.7 ft		L			I					J
	NOTE: S	Soils visually field class	ified in accordance										
	with the	Unified Soil Classificat	ion System										

**Boring Designation** CHDVC-37-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore CHDVC-37-1-1-86 : N 339719.5338 E 2342747.102 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 DMB 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 8/15/86 8/15/86 16. ELEVATION TOP OF BORING -38' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 96% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38 0': CLAYEY SILT (ML), black, with organics. Start Time: 12:32 Stop Time: 12:32 1 -41.5 ‡ 3.5 3.5': SILTY SAND (SP-SM), fine; gray, with 1" to 1/8" thick layers of clay 3" to 6" apart. Penetrometer - 1.5 TSF 2 3 -56.5  $\pm$  18.5 18.5': SILTY CLAYEY SAND (SM), fine; olive, 4 calcareous (Cooper Marl). Penetrometer - 4.0 TSF  $-58.0 \pm 20.0$ 

BOTTOM OF BOREHOLE AT -58.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-38-1-1-86
SHEET 1
OF 1 SHEETS

DRILLING L	_OG	South Atlantic Div	vicion		harl			arbor		1
1. PROJECT		South Atlantic Div	151011						OF 1 SE	HEE IS
	bor Ent	rance Channel Deep	ening					South Carolina NAD83	MLLW	/
								OF BIT		
2. HOLE NUMBER CHDVC-38-1-1		CATION COORDINATES  N 339424.5053 E 2	342570 154					ER'S DESIGNATION OF DRILL 500 Vibracore		
3. DRILLING AGENCY		1 000-12-1.0000	042070.104				MPLE	S DISTURBED U	INDISTURBE	D
Ocean Surveys 4. NAME OF DRILLER				13 7	TOTA	I NII	4 MBEE	E CORE BOXES 0	0	
DMB			•	_				OUND WATER NA		
5. DIRECTION OF BOI VERTICAL INCLINED	RING	DEG FROM VERTICAL	BEARING	15. [	DATE	BOF	RING		1PLETED 8/15/86	
6. THICKNESS OF OV	ERBURD	EN 20'	•	16. E	ELEV	ATIO	N TOI	P OF BORING -31.3' MLLW		
7. DEPTH DRILLED IN	ITO ROCK	( 0'						ECOVERY FOR BORING 98%		
8. TOTAL DEPTH OF E	BORING	51.3'		18. 8		ATUF  / <b>A</b>	RE AN	ID TITLE OF INSPECTOR		
ELEV DEPTH		FIELD CLASSIFICATION (	-	Π,	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-31.3 <u>+</u>	<b>81</b>	(Description		'	, LO	Sar	RG %	11000		ź
-31.3	0': CLA sand.	YEY SILT (ML), black, w	ith organics, and			1		USCS		
<b>+</b>								Start Time: 11:25		
<u> </u>								Stop Time: 11:25		
#										
-34.7 3.4	2 /1. 01	LTY SAND (SP-SM), fine	or gray with lancas							
#	of clay.		e, gray, with lenses							
<u> </u>										
						2				
+					-					
								Penetrometer - 1.25 TSF		
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+ 1										
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-51.3 = 20.0										] <b> </b>
	BOTTC	M OF BOREHOLE AT -	51.3 ft						-	
	NOTE:	Soils visually field classi	fied in accordance							
	with the	Unified Soil Classification	on System							

Boring Designation CHDVC-39-1-1-86

				DIV (IQUON)	1	11.10	T	A TIO		Borning Designation				
DF	RILLIN						STALL Char			arbor	SHEE	F 1 SHEE		
1. PRO						9. (	COOF	DINA	TE S	YSTEM	VERT	ICAL		
Cha	rleston	Har	bor Ent	rance Channel Deep	ening					South Carolina NAD83	<u>:</u> N	/ILLW		
CHE	NUMBE DVC-39	-1-1	-86 I	CATION COORDINATES N 339200.4873 E 2	342471.194	(	OSI	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore				
	LING AGE an Sur\					12.	TOT	AL SA	MPLE 3	DISTURBED 3	UNDIST	URBEI	)	
4. NAMI	OF DRII					13.	TOT	AL NU		R CORE BOXES 0				
DME 5 DIRE	3 CTION OI	F BOI	RING	DEG FROM	BEARING	14.	ELE	/ATIC	N GR	ROUND WATER NA				
l ⊠ v	ERTICAL ICLINED		· · · · · · · · · · · · · · · · · · ·	VERTICAL	: DEFINATION	15.	DATI	BOF	RING	STARTED CC 8/15/86	OMPLETE 8/1	ED 5/86		
6. THIC	KNESS O	F OV	ERBURD	EN 18.4'	•	16.	ELE	/ATIC	N TO	P OF BORING -27.7' MLLW				
7. DEP1	H DRILLE	ED IN	ITO ROCK	( 0'						RECOVERY FOR BORING 92%				
8. TOT <i>A</i>	L DEPTH	I OF I	BORING	46.1'		18.		IATUН √А	RE AN	ND TITLE OF INSPECTOR				
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION (			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
-27.7_	_	Ū	0': CLA	YEY SANDY SILT (MH)	black, with			S						
_			organic	S.										
=										Start Time: 11:54 Stop Time: 11:54				
	_													
=	_									Penetrometer - 0.25 TSF				
-								1						
=														
-														
-	_													
=														
-			7': At 7 occurrii	, thin 1/4" to 1/2" thick leng randomly.	nses of sand									
=														
-	_							2						
=														
=			<b>10'</b> : At	10', sand lenses occurrin	g every 1" to 4".									
-	_													
=														
=														
-														
-	-		<b>14'</b> : At	14', sand lenses are 1/4"	to 1/2" thick and			3						
-			occur fi	rom 1/4" to 3" apart.										
=														
=	<u> </u>													
=	_									Penetrometer - 0.25 TSF				
-46.1 <sup>-</sup>	18 1													
-40.1	10.4		воттс	M OF BOREHOLE AT -	46.1 ft					I			I	
			NOTE:	Soils visually field classife Unified Soil Classification	fied in accordance									

Boring Designation CHDVC-40-1-1-86

		DIVISION		INIS	STALL	۸٦١٨	NI	DOIL	ig Dcc	signatio		HEET 1	_
DRILLING L	OG	South Atlantic Div	vision	l				arbor				= 1 sh	1 EETS
1. PROJECT Charleston Harb					COOR	DINA	TE S	YSTEM	Carolin	a NAD83		RTICAL MLLW	
		·	·····9	10.	SIZE	AND	TYPE	OF BIT			•		
2. HOLE NUMBER CHDVC-40-1-1-		CATION COORDINATES I 338879.474 E 23	42383 25	1					SIGNATION Pracore	OF DRILL			
3. DRILLING AGENCY	•	1 00007 0.47 4 6 20	+2000.20				MPLE			STURBED	UND	ISTURBED	
Ocean Surveys.  4. NAME OF DRILLER	, Inc.				<b>TOT</b>		3	2005		3		0	
DMB								CORE		0 NA			
5. DIRECTION OF BOR VERTICAL INCLINED	ING	DEG FROM VERTICAL	BEARING		DATE				STARTE		COMPL	ETED 8/15/86	
6. THICKNESS OF OVE	RRURDE		:	16.	ELEV	ATIC	N TO	P OF BO		-27.5' N		5/15/60	
7. DEPTH DRILLED INT		0'		17.	TOTA	L CC	RE R	ECOVER	RY FOR BO	DRING 83°			
8. TOTAL DEPTH OF B		44.7'		18.		ATUI <b>I/A</b>	RE AN	ID TITLE	OF INSPE	CTOR			
		FIELD CLASSIFICATION	DE MATERIAI S		%							rt /s/	alue
ELEV DEPTH		(Description	)		RÉC	Samp No.	g%		· ·	REMARKS		Blows/ 0.5 ft	N-Value
-27.5	0': CLAY 1/2" to 1 between	YEY SILT (ML), black, v " thick layers of sand w	vith organics, with th 1" to 1' of clay										
	Detween								ime: 13:0 ime: 13:0				
						1							
<b>± 11</b>												-	
<b>± 111</b>													
<b>± 11</b>													
土 川													
Ŧ													
<b>=        </b>													
<b>=        </b>													
<b>‡</b>													
‡						2							
<b>‡</b>													
<u> </u>													
#													
<u> </u>													
<b>=        </b>													
<b>+        </b>													
‡													
<b>‡</b>						3							
<b>‡ III</b>							-						
<b>#</b>													
<b>+</b>													
<b> </b>													
Ŧ III													
<u> </u>													
± <b>         </b>													
-44.7 17.2 17.2 17.2 17.2 17.2 17.2 17.2 17													
	BOTTO	M OF BOREHOLE AT -	44.7 ft										
	NOTE: S	Soils visually field classi Unified Soil Classificati	fied in accordance										
	with the	Onnieu Son Ciassincati	on System										
													- 1

**Boring Designation** CHDVC-41A-1-1-86

DRILLING LOG DIVISION South Atlant		ISTALL			SHEE			
South Atlant		Charleston Harbor OF 1 SHEE  9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW						
1. PROJECT								
Charleston Harbor Entrance Channel					OF BIT	/ILLVV		
2. HOLE NUMBER : LOCATION COORDINA					ER'S DESIGNATION OF DRILL			
CHDVC-41A-1-1-86 N 340579.7908	E 2344158.948	OSI	Mod	el 15	500 Vibracore			
3. DRILLING AGENCY	12	2. TOT	AL SA		•			
Ocean Surveys., Inc. 4. NAME OF DRILLER	46		AL NII	4	4	0		
DMB					R CORE BOXES 0			
5. DIRECTION OF BORING DEG FROM	BEARING	4. ELE\	ATIO	N GR	OUND WATER NA : COMPLETE	- D		
	15	5. DATE	BOF	RING		7/86		
6. THICKNESS OF OVERBURDEN 2	20'	6. ELE\	/ATIO	N TO	P OF BORING -38' MLLW			
7. DEPTH DRILLED INTO ROCK		7. TOT/	AL CC	RE R	ECOVERY FOR BORING 100%			
	58'			RE AN	ID TITLE OF INSPECTOR			
	00	<u> </u>	<mark>√A</mark>				Φ	
I ELEV IDEPIHI 🙃 I	TION OF MATERIALS cription)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
-38 ± <b>0':</b> SAND (SM), fine; gray			ιχ	<u> </u>				
# Alternating 1" to 3" layers	of gray clay and gray fine							
sand.					Start Time: 9:50			
<u> </u>					Stop Time: 9:51			
ŢŢŢŢ								
			1					
<u></u>								
<del></del> <mark>∤┇</mark> ┦					Penetrometer - 0.25 TSF to 0.50 TSF			
<b>‡</b>								
<del></del> <mark>┆╽┆</mark>								
<b>‡</b>								
<u></u>								
			2					
<u> </u>								
<u></u>								
<u> </u>								
<b>‡</b>								
<del></del>			3					
<del> </del>								
<mark>⊦      </mark>								
│ <u></u>								
<b> </b>								
<u></u>								
-58.0 = 20.0			4					
BOTTOM OF BOREHOLI	E AT -58.0 ft				1			
NOTE: Soils visually field	classified in accordance							
with the Unified Soil Class	sification System							

Boring Designation CHDVC-42-1-1-86

		DIVISION		INIC	STALL	٨ΤΙΟ	N.I.	DOIL	ig Designation			
DRILLING L	OG	South Atlantic Div	vision					arbor		SHEE	т 1 1 sні	
1. PROJECT					COOR	DINA	TE S	YSTEM	Carolina NAD83	VERT		
Chanesion Hair	וסו בוונו	rance Channel Deep	bening					OF BIT	Carolina NADOS	<u> </u>	/ILL V V	
2. HOLE NUMBER		CATION COORDINATES							IGNATION OF DRILL			=
CHDVC-42-1-1- 3. DRILLING AGENCY	86 : r	N 339148.5843 E 2	342984.202				ei 15 MPLE	500 Vib s	DISTURBED	UNDIST	URBED	
Ocean Surveys.	, Inc.						3		3		0	
4. NAME OF DRILLER DMB								R CORE E				
5. DIRECTION OF BOR	ING	DEG FROM VERTICAL	BEARING	14.	ELE	'ATIC	N GR	OUND W	ATER NA STARTED	COMPLETE	-D	
INCLINED		VERTICAL		15.	DATE	BOF	RING		8/15/86		5/86	
6. THICKNESS OF OVE	RBURDE	EN 17'						P OF BO				
7. DEPTH DRILLED INT	TO ROCK	0'							Y FOR BORING 86% OF INSPECTOR	<u> </u>		
8. TOTAL DEPTH OF B	ORING	47.7'		10.		I/A	VL AIV	ID IIILL	OF INOT LOT OR			
ELEV DEPTH E		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-30.7	<b>0'</b> : CLA	YEY SILT (ML), black, v	vith organics, with			0)						一
<u> </u>	1/16" to to 3" of	2" layers of sand appeal	aring @ 10.3' with 1"									
#									me: 14:23:30 me: 14:23:45			
												-
± <b>111</b>						1						
<b> </b>												
<u> </u>												
#								Ponetro	ometer < 0.25 TSF			
+								reneuc	Jilleter < 0.23 131			
± <b>         </b>												
<b>± 11</b>												
<u> </u>												
‡						2						
± <b>       </b>												
#												
<b> </b>												
<u> </u>												
± <b>III</b>												
+												
#												
<b> </b>						_						
<u> </u>						3						
‡												
<b>‡</b>												
‡												
<b>‡</b>												
<u> </u>												
<u>.                                    </u>												
-47.7 <del>  1</del> 7.0	ВОТТО	M OF BOREHOLE AT	-47.7 ft				<u> </u>					
		Soils visually field class										
		Unified Soil Classificati										

Boring Designation CHDVC-43-1-1-86

	-	11 (10101)	T.			4 TI O				
DRILLING L	$\alpha$	IVISION South Atlantic Di			STALL Char				SHEET OF <b>1</b> S	1 SHEETS
1. PROJECT	· ·		9	9. (	COOR	DINA	TE S	YSTEM : \	/ERTICAL	
Charleston Hark	oor Entrar	nce Channel Deep						South Carolina NAD83	MLL	/V
2. HOLE NUMBER		TION COORDINATES						ER'S DESIGNATION OF DRILL		
CHDVC-43-1-1-	-86 N 3	338846.5853 E 2						500 Vibracore	IDIOTI IDD	
<ol><li>DRILLING AGENCY Ocean Surveys.</li></ol>	., Inc.			12.	TOTA	L SA	мрц <u>е</u> 3	S DISTURBED UI	NDISTURB 0	ΕD
4. NAME OF DRILLER	,			13.	TOTA	L NU	IMBE	R CORE BOXES 0		
DMB 5. DIRECTION OF BOR	RING	: DEG FROM	BEARING	14.	ELEV	ATIC	N GR	OUND WATER NA		
		VERTICAL		15.	DATE	ВОР	RING	STARTED COMI 8/15/86	PLETED 8/15/86	3
6. THICKNESS OF OVE	ERBURDEN	; 16.5'	•	16.	ELEV	ATIC	N TO	P OF BORING -28.4' MLLW	0/ 10/00	
7. DEPTH DRILLED IN	TO ROCK	0'	_					ECOVERY FOR BORING 82%		
8. TOTAL DEPTH OF B	ORING	44.9'		18.		atuf <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR		
ELEV DEPTH 5	FIE	ELD CLASSIFICATION			%	Samp No.	۵.	REMARKS	Blows/	N-Value
-28.4 <sub>—</sub>	0': CLAYE	(Description Y SILT (ML), black, v	•		REC	San	RQD %	-	<u> </u>	<u> </u>
		thick lenses of sand of	occurring within 1/4" to	0						
‡								Start Time: 15:27:45 Stop Time: 15:27:59		
± <b>       </b>						1		'		
‡										
Ī										
<u> </u>								Penetrometer25 TSF		
‡										
± <b>       </b>										
‡										
<b>±</b>										
						2				
‡										
± <b>       </b>										
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<b>±</b>										
<u> </u>										
‡										
± <b>       </b>										
‡										
						3				
<b>‡</b>										
‡										
<b>+</b>										
‡										
<b>‡</b>										
‡										
-44.9 <sup>±</sup> 16.5	BOTTOM	OF BOREHOLE AT	-44 9 ft							
	with the U	ils visually field class nified Soil Classificat	ion System							

Boring Designation CHDVC-44-1-1-86
INSTALLATION SHEET 1
OF 1 SHEETS
9. COORDINATE SYSTEM VERTICAL

DRILLING L	-OG S	outh Atlantic Division		Char	lesto	on Ha	arbor	of 1	SHI	EETS	
1. PROJECT	South Atlantic Division				9. COORDINATE SYSTEM State Plane - South Carolina NAD83  VERTICAL MLLW						
Charleston Har	bor Entranc	e Channel Deepening	<del></del>					<u>: M</u>	LLW		
2. HOLE NUMBER	LOCATI	ON COORDINATES					OF BIT  ER'S DESIGNATION OF DRILL				
CHDVC-44-1-1		8878.6551 E 2343345.24					500 Vibracore				
3. DRILLING AGENCY	· ·			. TOTA		MPLE	S DISTURBED	UNDIST		)	
Ocean Surveys 4. NAME OF DRILLER			10	TOT		3	: 3 :		0		
DMB			_				R CORE BOXES 0				
5. DIRECTION OF BOI	RING	DEG FROM BEARING VERTICAL	14	. ELEV	ATIC	IN GR	OUND WATER NA : CO	MPLETE	D		
INCLINED			15	. DATE	BOF	RING	8/17/86	8/17			
6. THICKNESS OF OV	ERBURDEN	18.5'	16	. ELE\	'ATIC	N TOI	P OF BORING -28.5' MLLW				
7. DEPTH DRILLED IN	ITO ROCK	0'					ECOVERY FOR BORING 92%				
8. TOTAL DEPTH OF E	BORING	47'	18		atuf <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR				
									· · · ·		
ELEV DEPTH GENT		D CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
-28.5	0': SILTY CL	AY (MH), black, with organics, vck layers of sand from 1/2" to 1"	vith apart								
≢ ■	1/4 10 1 1111	CK layers of Sand Holli 1/2 to 1	аран.								
± III							Start Time: 10:37:05 Stop Time: 10:37:14				
#							Ctop Timer Tolor I I				
<b>‡</b>							Penetrometer < 0.25 TSF				
+ 11							Felletionietei < 0.23 13i				
‡									-		
					1						
± <b>III</b>									-		
<b>+  </b>											
<b>‡</b>											
<b>†</b>											
₹ ■											
<b>±</b>											
‡											
Ŧ											
<u> </u>					2						
± <b>III</b>					_						
<b>‡ III</b>											
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± <b>II</b>											
‡ 🔢											
<b>‡</b>											
± <b>I</b>											
<b>+ III</b>											
<b>‡</b>									-		
<b>‡</b>					3						
<b>±</b>									ļ		
Ŧ											
± ■											
<u> </u>											
<b>王</b>											
‡											
+											
-47.0 <sup>‡</sup> 18.5	BOTTOM O	F BOREHOLE AT -47.0 ft									
	NOTE: Soils	visually field classified in accord	lance								
	with the Unif	ied Soil Classification System									

DIVISION

Boring Designation CHDVC-45-1-1-86

DBILLIN	C I	06	DIVISION		1	STALL				SHEE		1	
	OSECT South Atlantic Division						Charleston Harbor OF 1 SHEE  9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW						
1. PROJECT	PROJECT Charleston Harbor Entrance Channel Deepening											,	
		bor Entr	ance Channel Dee	pening	_				OF BIT	: IV	ILLVV		
2. HOLE NUMBER CHDVC-45-			CATION COORDINATES 339472.8353 E						ER'S DESIGNATION OF DRILL 500 Vibracore				
<ol><li>DRILLING AGE Ocean Surv</li></ol>					12.	TOT	AL SA	MPLE 3	S DISTURBED 3	UNDIST	URBEI 0	)	
4. NAME OF DRIL					_				R CORE BOXES 0				
5. DIRECTION OF VERTICAL	BOI	RING	DEG FROM VERTICAL	BEARING					OUND WATER NA	MPLETE	D		
☐ INCLINED						DAT			8/17/86		7/86		
6. THICKNESS O					_				P OF BORING -38.4' MLLW RECOVERY FOR BORING 87%				
7. DEPTH DRILLE						SIGN	IATUI		ND TITLE OF INSPECTOR				
8. TOTAL DEPTH			55.9'				<b>√</b> /A				/ t %	e	
ELEV DEPTH	LEGEND		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
-38.4		0': CLA' organics	YEY SILT (ML), black,	with sand, and									
+	Ш	3							Start Time: 10:13				
‡	Ш								Stop Time: 10:14				
Ī													
+	Ш						1						
#	Ш							-					
-42.8 + 4.4	Ш												
‡		<b>4.4'</b> : SIL	TY SAND (SM), fine;	gray.									
1 ‡													
1 ±													
<u> </u>													
1 ±							2						
<u> </u>													
1 ±													
l ± :													
1 =													
<b>l</b>													
l													
1 主	+   +												
l ‡													
1 = 1													
-52.3 <del>+</del> 13.9													
10.5		<b>13.9</b> ': S	LTY SAND (SP-SM),	fine to medium; gray	,	1	,	1					
‡		with she	ell fragments.				3						
‡													
l													
1 ±													
l ± '													
-55.9 ‡ 17.5		BOTTO	M OF BOREHOLE AT	-55.9 ft									
			Soils visually field class										
		with the	Unified Soil Classifica	tion System									

Boring Designation CHDVC-46-1-1-86

									V U-4	<u> </u>
DRILLING LO		IVISION South Atlantic Div	vision	1	STALL			arbor SHE		1 EETS
1. PROJECT					COOR	DINA	TE S\	/STEM VER	TICAL	
Charleston Harbor	Entrar	nce Channel Deep	ening	_				South Carolina NAD83	MLLW	'
2. HOLE NUMBER	. LOCA	TION COORDINATES						OF BIT R'S DESIGNATION OF DRILL		
CHDVC-46-1-1-86		339612.4491 E 2	347571.113	(	I ISC	Mod	el 15	500 Vibracore		
3. DRILLING AGENCY Ocean Surveys., In	20			12.	TOTA	AL SA	MPLE 4	S DISTURBED UNDI	STURBEI 0	·
4. NAME OF DRILLER	10.			13.	TOTA	AL NU	•	R CORE BOXES 0	- 0	
DMB 5. DIRECTION OF BORING		DEG FROM	BEARING	14.	ELEV	'ATIO	N GR	OUND WATER NA		
5. DIRECTION OF BORING VERTICAL INCLINED	J	VERTICAL	BEARING	15.	DATE	BOF	RING		TED /17/86	
6. THICKNESS OF OVERB	BURDEN	20'		_				P OF BORING -40.5' MLLW		
7. DEPTH DRILLED INTO F	ROCK	0'		1				ECOVERY FOR BORING 100%  D TITLE OF INSPECTOR		
8. TOTAL DEPTH OF BORI	ING	60.5'		10.		1/A	VL AIN	B TITLE OF INGLECTOR		
ELEV DEPTH E	FIE	ELD CLASSIFICATION ( (Description			% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-40.5 <b>      0':</b>		Y SILTY SAND (SC-				თ 1		USCS		
l <del></del> [	own, with	h shell fragments, ph Cooper Marl.	osphate nodules an	d		1		Chart Times 00:40		
		oopor man.						Start Time: 09:19 Stop Time: 09:22		
<b>│</b>								Penetrometer - 0.25 TSF		
<del>Ĭ</del>										
<b>│</b>						2				
<b> </b>										
<b>│</b>								Penetrometer - 1.0 TSF		
l <u> </u>								T chearemeter 11.0 Tel		
<u></u>										
						2				
<b> </b>						3				
<b>Ĭ</b>										
-53.0 12.5										
	. <b>5':</b> SIL I ooper M	Y SAND (SM), fine; (larl).	olive, calcareous					Penetrometer - 1.5 TSF		
	·	•								
▎  ┋ <mark>┆∤┆</mark> ┥┆										
<b>│</b>						4				
<b> </b>										
-60.5 <sup>±</sup> 20.0										
	OTTOM (	OF BOREHOLE AT -	60.5 ft							' <b> </b>
NC	DTE: Soi	ils visually field classi	fied in accordance							
with	th the Ur	nified Soil Classificati	on System							

Boring Designation CHDVC-48-1-1-86

			DIVISION	INIC	STALL	٨ΤΙΟ	NI	Borning Designation	SHEE		_
DRILLING	LO	G	South Atlantic Division					arbor		т <i>^</i> 1 sн	
1. PROJECT		_		9. (	COOR	DINA	TE S	YSTEM	: VERTI	CAL	
⊢ Charleston Ha ∣	ırbor	Entra	ance Channel Deepening					South Carolina NAD83	: IV	1LLW	-
2. HOLE NUMBER			CATION COORDINATES	11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL			$\dashv$
CHDVC-48-1- 3. DRILLING AGENC		: N	338342.5975 E 2348280.341					500 Vibracore	LINDICT	LIDDE	
Ocean Survey		nc.		12.	TOTA	AL SA	.MPLE	DISTURBED 3	UNDIST	0 URBEL	'
4. NAME OF DRILLE				13.	TOTA	AL NU	IMBEI	R CORE BOXES 0	,		
DMB 5. DIRECTION OF BO	ORING	<del></del>	DEG FROM BEARING	14.	ELE\	/ATIC	N GR	OUND WATER NA			
			VERTICAL		DATE			9/16/86		6/86	
6. THICKNESS OF O	VERB	URDE	N 17.5'	_				P OF BORING -41.2' MLLW RECOVERY FOR BORING 100%			
7. DEPTH DRILLED I	NTO F	ROCK	0'					ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF		ING	58.7'			I/A					
ELEV DEPTH B		F	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-41.2			EY SANDY SILT (ML), dark olive,								
± <b>I</b>		ooper	us, with hard layers of silt in the first 2' Marl).					Start Time: 12:59			
<u> </u>								Stop Time: 13:17			
<b>#</b>											
Ī						1					
+											
1											
<b>±</b>											
<b>‡</b>											
<u> </u>											
#											
Ŧ						2					
<b>±</b>											
<u></u>											
<b>#</b>											
Ī											
± <b>II</b>								Penetrometer - 1.75 TSF			
<u> </u>						3					$\neg$
#						Ĭ					=
#											
<u> </u>											
‡											
T T											
± -58.7											
	ВС	NOTTO	OF BOREHOLE AT -58.7 ft								
	NC wit	OTE: S h the l	Soils visually field classified in accordance Unified Soil Classification System								

Boring Designation CHDVC-48A-1-2-86

								boring bes	signation		U-40	<u> </u>
DRILLING L		DIVISION		l	STALL					SHEE	Τ .	1
DRILLING L	OG	South Atlantic Di	vision	(	Char	lesto	on Ha	arbor		OF	1 sh	EETS
1. PROJECT								/STEM		: VERTI		
Charleston Harb	or Entra	nce Channel Deep	pening		State	Pla	ne -	South Carolina	a NAD83	N	1LLW	
				10.	SIZE	AND	TYPE	OF BIT				
2. HOLE NUMBER		ATION COORDINATES						R'S DESIGNATION	N OF DRILL			
CHDVC-48A-1-2	2-86 N 3	338342.5975 E 2	2348280.341	(	osi i	Mod	el 15	500 Vibracore				
3. DRILLING AGENCY	<u>.</u>			12.	TOTA	L SA	MPLE	S DI	STURBED	UNDIST	URBE	
Ocean Surveys.	, Inc.						2		2		0	
4. NAME OF DRILLER				13.	TOTA	L NU	MBEF	R CORE BOXES	0			
DMB				14.	ELEV	'ATIO	N GR	OUND WATER	NA			
5. DIRECTION OF BOR VERTICAL	ING	: DEG FROM : VERTICAL	BEARING					STARTE		COMPLETE	D	
INCLINED		:	:	15.	DATE	BOF	RING	• -	/16/86	•	6/86	
6. THICKNESS OF OVE	DBIIDDEN	9.1'	•	16.	ELEV	'ATIO	N TOI	P OF BORING	-52.2' ML			
				17	TOTA	1 00	DE D	ECOVERY FOR BO				
7. DEPTH DRILLED INT	O ROCK	0'						ID TITLE OF INSPE		<u> </u>		
8. TOTAL DEPTH OF B	DTAL DEPTH OF BORING 61.3'							ID TITLE OF INOTE	.0101			
				l		I/A 					70	ē
ELEV DEPTH 0	FI	ELD CLASSIFICATION			% REC	Samp No.	ا ۾ ا	F	REMARKS		Blows/ 0.5 ft	N-Value
		(Description	n)		KEC	San	RQD %				<u> </u>	ź
	marl.	EY SANDY SILT (ML)				1		Start Time: 1636 Stop Time: 172				
-61.3— 9.1						2		Penetrometer - :	2.0 TSF			

BOTTOM OF BOREHOLE AT -61.3 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-49-1-1-86

DRILLING L	OG	DIVISION		INSTA				SHEE		
		South Atlantic Div	vision	9. CO						EETS
1. PROJECT Charleston Hark	or Ent	rance Channel Deep	pening						/ILLW	
Onanestorrian	) LIII	rance onamic beep	ocining					OF BIT		
2. HOLE NUMBER		OCATION COORDINATES			_			R'S DESIGNATION OF DRILL		
CHDVC-49-1-1- 3. DRILLING AGENCY	1 : 68	N 333310.7374 E 2	353900.292	12. TO				00 Vibracore s : DISTURBED : UNDIST	UDDEE	$\leftarrow$
Ocean Surveys.	, Inc.			12. 10	IAL		7 4	4	0	ĺ
4. NAME OF DRILLER	,			13. TO	TAL N	IUM	IBER	CORE BOXES 0		
DMB 5. DIRECTION OF BOR	DING	: DEG FROM	BEARING	14. EL	EVAT	ON	GR	OUND WATER NA		
VERTICAL INCLINED		VERTICAL	BLAKING	15. DA	TE BO	ORIN	NG	STARTED COMPLETI 8/16/86 8/1	ED 6/86	
6. THICKNESS OF OVE	ERBURDI	EN 20'	•	16. EL	EVAT	ON	TOF	OF BORING -41.4' MLLW		
7. DEPTH DRILLED IN	TO ROCK	<b>O</b> '						ECOVERY FOR BORING 100%		
8. TOTAL DEPTH OF B	ORING	61.4'		18. SIC	NATI N/A		AN	D TITLE OF INSPECTOR		
									·	e e
ELEV DEPTH		FIELD CLASSIFICATION (Description	1)	% RE	Samp No.	200	3%	REMARKS	Blows/ 0.5 ft	N-Value
-41.4	0': SILT (Coope	ΓΥ SAND (SM), fine; dar r Marl).	k olive, Calcareous		1			USCS		
-43.1 = 1.7								Start Time: 10:54 Stop Time: 11:08		
<u>+</u> •/•/•/•	1.7': CL	AYEY SILTY SAND (SO eous (Cooper Marl).	C), fine; dark olive,					Stop Time. 11.00		
	Calcale	ous (Cooper Man).								
								Penetrometer = 1.25 TSF		
					2					
-48.8 7.4 <b>/</b> ///	<b>7.4'</b> : CL	AYEY SANDY SILT (MI	L), dark olive,							
<b>=</b>		eous (Cooper Marl).	,, ,							
<b>#</b>								Department 2.0 TCF		
<b>=        </b>								Penetrometer = 2.0 TSF		
<b>=</b>					3					
<u> </u>						_				
#										
<b>‡</b>										
<u> </u>										
#										
<b>=</b>										
<u> </u>						_				
‡					4					
Ī								_		
<b>=        </b>								Penetrometer = 1.5 TSF		
#										
<u> </u>										
‡										
-61.4 = 20.0										
	вотто	OM OF BOREHOLE AT -	-61.4 ft							
		Soils visually field class								
	with the	e Unified Soil Classificati	on System							
										- 1

Boring Designation CHDVC-49A-1-1-86

					IN	STALL	ΔΤΙΟ	NI	Borning Designation	SHEE		1	
DRILLING	L	.OG	DIVISION South A	tlantic Di	vision					arbor		1 sн	-
1. PROJECT						9.	COOF	DINA	TE S	YSTEM	VERTI	CAL	
Charleston Ha	ark	oor Entr	ance Char	nnel Dee	pening					South Carolina NAD83	<u> </u>	/LLW	
2. HOLE NUMBER		:100	CATION COO	RDINATES						E OF BIT  ER'S DESIGNATION OF DRILL			
CHDVC-49A-	-1- <sup>1</sup>									500 Vibracore			
3. DRILLING AGENO						12	. TOT	AL SA		•	UNDIST		)
Ocean Surve		., Inc.				12	TOT	AI NII	1 IMBE	E CORE BOXES 0	<u>:</u>	0	
DMB						_				ROUND WATER NA			
5. DIRECTION OF B  VERTICAL	3OR	RING	DEG I		BEARING						OMPLETE	ĒD.	
INCLINED					:		. DATI			8/16/86		6/86	
6. THICKNESS OF (	OVE	ERBURDE	:N	14'						P OF BORING -41.4' MLLV	<u> </u>		
7. DEPTH DRILLED	IN	TO ROCK		8.4'						RECOVERY FOR BORING 100%  ND TITLE OF INSPECTOR			
8. TOTAL DEPTH O	F B	BORING		63.8'		10		N/A	\L /\(\)	NO TITLE OF INOTEOTOR			
ELEV DEPTH	LEGEND	I	FIELD CLASS	SIFICATION (Descriptio	OF MATERIA n)	LS	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-41.4		<b>0'</b> : Jet to	14'					0)					
<b>l</b>										Start Time: 11:48			
<b> </b>										Start Time: 11:48 Stop Time: 12:05			
<b>I</b>													
<b> </b>													
1 = 1													
1 ±													
<b>l</b>													
1													
1 =													
<b> </b>													
1 =													
1 = 1													
1 ‡													
1 = 1													
1													
-55.4 = 14.0													
#		14': CLA	YEY SAND	Y SILT (MI	L), dark olive	<b>)</b> ,	]						
‡		Calcale	ous (Cooper	iviaii).									
🛊 📗													
‡								1					
圭									1				
‡													
🛊 📕													
‡													
‡													
-63.8 + 22.4		DOTTO:	M OF BODE	11015.45	C2 C **								
			M OF BORE										
		NOTE: 8 with the	Soils visually Unified Soil	field class Classificat	sified in acco tion System	rdance							

Boring Designation CHDVC-50-1-1-86

		DIVISION		INIC	STALL	٨ΤΙΟ	N.I.	DOIL	ig De	signation	SHE	V C-30	
DRILLING L	OG.	South Atlantic Div						arbor			-	1 SH	1 EETS
1. PROJECT Charleston Hark	oor Ent	rance Channel Deep		9. C	COOR	DINA	TE S	YSTEM	Caroli	na NAD83		TICAL MLLW	
		·						OF BIT			•		
2. HOLE NUMBER CHDVC-50-1-1-		CATION COORDINATES V 331100.9902 E 2						er's des 500 Vib		ON OF DRILL			
3. DRILLING AGENCY Ocean Surveys	. Inc.			12.	TOT	AL SA	MPLE 4	S	1	DISTURBED 4	UNDI	STURBEI	
4. NAME OF DRILLER	.,			13.	TOT	AL NU		R CORE I	BOXES	0	<u>;</u>		
DMB 5. DIRECTION OF BOR	RING	DEG FROM	BEARING	14.	ELE\	/ATIC	N GR	OUND W		NA	- <del>-</del>		
		VERTICAL			DATE					8/16/86		16/86	
6. THICKNESS OF OVE	ERBURDI	EN 20'	<u> </u>					P OF BO		-41.7' M			
7. DEPTH DRILLED IN	TO ROCK	0'	<u>_</u>					ID TITLE		BORING 1009 PECTOR	<b>%</b>		
8. TOTAL DEPTH OF B	ORING	61.7'				I/A							
ELEV DEPTH 9		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %			REMARKS		Blows/ 0.5 ft	N-Value
-41.7		Y CLAYEY SAND (SM)	, fine; dark olive,										
	Calcare	eous (Cooper Marl).				1		Start Ti Stop Ti	ime: 10: me: 10:				
-44.0 2.3	2 21. (1	AYEY SANDY SILT (MI	) dark aliva							= 1.0 TSF			
#	Calcare	ous (Cooper Marl).	-), dark olive,										
<b>+</b>								Penetro	ometer	= 1.5 TSF			
<u> </u>													
<b></b>						2							
#													
<b>#</b>													
<u> </u>													
<u> </u>													
#													
<b>T</b>						3							
<b>±</b>													
<u> </u>													
<u>±</u>													
<u> </u>													
<b>並</b>								Penetro	ometer	= 2.5 TSF			
<b>±</b>													
<u> </u>						4							
#													
<u> </u>													
$\pm$								Penetro	ometer	= 1.5 TSF			
-61.7 ‡ 20.0	DOTTO	MA OF BODELIOLE AT	C4 7 #										
		M OF BOREHOLE AT -											
	NOTE: with the	Soils visually field classi Unified Soil Classification	fied in accordance on System										
			•										
													ı

Boring Designation CHDVC-51-1-1-86

DRILLING L	OG	DIVISION			STALL				SHEE		
1. PROJECT		South Atlantic Div						arbor ⁄STEM	OF '	1 SHI	EETS
	or Ent	rance Channel Deep						South Carolina NAD83		/LLW	
			-					OF BIT			
2. HOLE NUMBER CHDVC-51-1-1-		OCATION COORDINATES N 331103.3213 E 2	356748.736	(	) SI	Mod	el 15	er's designation of drill 500 Vibracore	<del></del>		
<ol> <li>DRILLING AGENCY Ocean Surveys.</li> </ol>	. Inc.			12.	TOTA	AL SA	MPLE 4	S DISTURBED 4	UNDIST	0	' <b> </b>
4. NAME OF DRILLER	,			13.	TOTA	AL NU		R CORE BOXES 0	<del>i</del>		
DMB 5. DIRECTION OF BOR	ING	: DEG FROM	BEARING	14.	ELE	'ATIC	N GR	OUND WATER NA			
VERTICAL INCLINED	anvo	VERTICAL	:	15.	DATE	BOF	RING	STARTED 8/16/86	COMPLETE 8/16	D 6/86	
6. THICKNESS OF OVE	ERBURD	EN 20'						P OF BORING -34.1' MLL	.W		
7. DEPTH DRILLED IN	TO ROCK	( 0'						ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B	ORING	54.1'		18.		АТОН <b>I</b> /A	KE AN	ID TITLE OF INSPECTOR			
ELEV DEPTH		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-34.1+	0': SILT	TY CLAYEY SAND (SM)				Sa	8.			@ O	Ż
	Calcare	eous (Cooper Marl).`´						Start Time: 08:56 Stop Time: 09:00			
								Penetrometer = 0.75 TSF			
						1					$\dashv$
						2					
	<b>10':</b> 10.	2' to 12.2' lenses of cem	ented marl.								
						3					
│											
54.1 = 30.0						4					
-54.1 <u>干</u> 20.0 <mark>           </mark>	BOTTC	OM OF BOREHOLE AT -	54.1 ft								$\dashv$
	NOTE:	Soils visually field classi	fied in accordance								
	with the	e Unified Soil Classificati	on System								
											- 1

Boring Designation CHDVC-52-1-1-86

		DIVISION	INI	STALL	۸٦١٨	NI	Borning Designation	SHEE		
DRILLING L	.OG	South Atlantic Division					larbor		1 sh	1 EETS
1. PROJECT	hor Ent	rance Channel Deepening	9. (	COOR	DINA	TE S	YSTEM · South Carolina NAD83	VERT		
Chaneston har	DOI LIII	rance Chamilei Deeperiing					E OF BIT	•		
2. HOLE NUMBER		CATION COORDINATES					ER'S DESIGNATION OF DRILL			
CHDVC-52-1-1 3. DRILLING AGENCY		N 329598.5599 E 2357875.03		. TOTA			500 Vibracore ES DISTURBED	UNDIST	IIDBEI	,
Ocean Surveys			12.	. 1017	AL OF	4	: 4	CINDIO	0	,
4. NAME OF DRILLER DMB			13.	. TOT	AL NU	JMBE	R CORE BOXES 0	•		
5. DIRECTION OF BOR	RING	DEG FROM BEARING	14.	. ELE\	/ATIC	N GR	ROUND WATER NA			
VERTICAL INCLINED		VERTICAL		. DATE			8/8/86		ED 8/86	
6. THICKNESS OF OV	ERBURDI	EN 20'					P OF BORING -44.2' MLLW	<u> </u>		
7. DEPTH DRILLED IN	TO ROCK	0'					RECOVERY FOR BORING 100%  ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF E	BORING	64.2'	10.		1/A	VL AI	ND TITLE OF INOT ECTOR			
ELEV DEPTH B		FIELD CLASSIFICATION OF MATERIAL (Description)	_S	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-44.2		Y SAND (SM), fine; dark olive, and,			1		USCS			
	Calcare	ous (Cooper Marl).					Start Time: 12:27 Stop Time: 12:38			
							Penetrometer = 0.7 TSF			
	<b>3.4':</b> 3.4 calcare	t' to 5.8' Thick lenses of extrememly ous SILT	hard							
					2					
						-				
					3					
-56.6 12.4	40.41.0	V AVEV CANDV OUT (AU) . I . I . I'								
1	Calcare	LAYEY SANDY SILT (ML), dark oliveous (Cooper Marl)								
1 ‡ 11		2" to 1" pods of olive calcareous ver ccuring randomly.	y sandy							
					4					
							Penetrometer = 1.5 TSF to 2.0 T	QE		
1 = 11							Telletionietel = 1.5 Tol to 2.0 To	OI .		
1 ‡ 11										
-64.2 ± 20.0										
J-1.2   20.0	вотто	M OF BOREHOLE AT -64.2 ft					I .			ı
		Soils visually field classified in accor	dance							
	with the	Unified Soil Classification System								

Boring Designation CHDVC-53-1-1-86

	DIVISION	INIC	TALL	٨ΤΙΟ	N I	borning Designation	SHEET		-
DRILLING LOG	South Atlantic Division					arbor	OF 1		
1. PROJECT	trance Channel Deepening	9. C	OOR	DINA	TE S	/STEM South Carolina NAD83	VERTIC		
Chancsion Harbor En	trance onarmer beepening					OF BIT	:		
	OCATION COORDINATES N 329149.1012 E 2360591.142	- 1				ER'S DESIGNATION OF DRILL			
3. DRILLING AGENCY	N 329149.1012 E 2300391.142				MPLE		UNDISTL		)
Ocean Surveys., Inc. 4. NAME OF DRILLER		40.	TOT 4		4	<u> </u>		0	
DMB		-				R CORE BOXES 0			
5. DIRECTION OF BORING VERTICAL INCLINED	DEG FROM BEARING VERTICAL		DATE			OUND WATER NA STARTED CC 8/9/86	MPLETEI 8/9/		
6. THICKNESS OF OVERBURD	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	16. E	ELEV	ATIO	N TO	P OF BORING -31.6' MLLW	0/9/	00	
7. DEPTH DRILLED INTO ROC	K 0'					ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF BORING	51.6'	18. \$		atuf I/ <b>A</b>	RE AN	ID TITLE OF INSPECTOR			
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)	<u> </u>	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	TY CLAYEY SAND (SC), fine; dark olive.			တိ	<u>«</u>			ш -	Ž
	(00),,								
						Start Time: 11:03 Stop Time: 11:11			
*/ <mark>*/</mark> *						Penetrometer = 1.5 TSF			
*/ <mark>*/</mark> *									
			İ	1				İ	
<u></u>				'				-	
*/ <u>*/</u> *									
*/*/*/									
**************************************			ļ						
				2					
**************************************			İ					ŀ	
\$ <b>6</b> /6/6									
						Penetrometer = 0.5 TSF			
				3					
			Ī						
2/2/2									
			Ī	4				Ī	
51.6	DM OF BOREHOLE AT -51.6 ft			•					$\dashv$
	Soils visually field classified in accordance								
with the	e Unified Soil Classification System								

Boring Designation CHDVC-54-1-1-86

	DIVISION							NI	DOIL	ig D	signatio		IEET	-
DRILLING L	.OG		uth Atlantic Div	vision	1	STALL Char			arbor			OF		1 EETS
1. PROJECT Charleston Harl	hor Fr				9. (	COOF	DINA	TE S	/STEM	Caroli	na NAD83		RTICAL MLLW	
Chancoton han	00. <u>L</u> .	manoo	Orialiiroi Boop	, og	_				OF BIT			•		
2. HOLE NUMBER CHDVC-54-1-1-			OORDINATES	361182.426					R'S DES		ON OF DRILL			
3. DRILLING AGENCY Ocean Surveys					12.	TOT	AL SA	MPLE	S		DISTURBED 4	UND	ISTURBEI	)
4. NAME OF DRILLER  DMB	.,				13.	TOT	AL NU		R CORE	BOXES	0	<b>:</b>		
5. DIRECTION OF BOR	RING	:	DEG FROM	BEARING	14.	ELE	/ATIO	N GR	OUND W		NA	·		
			VERTICAL			DATI				START	8/7/86	<del></del>	8/7/86	
6. THICKNESS OF OVI	ERBURI	DEN	20'		_				P OF BO		-37.1' N			
7. DEPTH DRILLED IN	TO ROC	CK	0'								BORING 100' PECTOR	%		
8. TOTAL DEPTH OF E	BORING	3	57.1'		10.		I/A	VL AIV	ID III'LL	01 11101	LOTOR			
ELEV DEPTH GEN		FIELD (	CLASSIFICATION (Description			% REC	Samp No.	RQD %			REMARKS		Blows/ 0.5 ft	N-Value
-37.1			ID (SM), fine; gra				് 1	<u> </u>	USCS					Z
	fragm	ents.								ime: 14				
									Stop T	ime: 15	:08			
			YEY SAND, fine;											
<mark>∔ ∤¦</mark> ¦	olive,	Calcareo	ous (Cooper Marl	).										
							2							
│														
<u>Ĭ</u>														
‡ <mark>[:[:</mark> ]							3							
<mark>∰</mark> †														
▎  ≢ <mark>┆┆┼╏</mark> ┆														
<del> </del>														
							4							
<u> </u>														
│														
<b>│</b>														
-57.1 = 20.0	DOTT		DODELLOLE AT	F7 4 ()										
			BOREHOLE AT -											- 1
	NOTE with the	: Soils vi he Unified	isually field classi d Soil Classificati	ified in accordance on System										- 1
	•••			- ,										
														- 1

Boring Designation CHDVC-54A-1-1-86

		IVISION		INIC	STALL	۸ΤΙΩ	NI	DOIL	ig Do	Signatio		HEET	
DRILLING L	og 🏻	South Atlantic Div	vision					arbor				F 1 SH	1 EETS
PROJECT     Charleston Harb	or Entrai	nce Channel Deep		9. (	COOR	DINA	TE S	YSTEM	Carolii	na NAD83	VE	RTICAL MLLW	
onanosion nais	701 E1111 G1	noo Onamioi Boop	og	_				OF BIT			•		
2. HOLE NUMBER CHDVC-54A-1-1		TION COORDINATES 327743.2332 E 2	361368.426					R'S DES		ON OF DRILL			
3. DRILLING AGENCY Ocean Surveys.	•				TOTA					DISTURBED 1	UNE	DISTURBEI 0	
4. NAME OF DRILLER	, 1110.			13.	TOTA	AL NU	•	R CORE	BOXES	0	:	0	
DMB 5. DIRECTION OF BOR	ING	DEG FROM	BEARING	14.	ELEV	'ATIO	N GR	OUND W	/ATER	NA			
✓ VERTICAL     ☐ INCLINED		VERTICAL		15.	DATE	BOF	RING		START	ED 8/7/86	COMPL	ETED 8/7/86	
6. THICKNESS OF OVE	RBURDEN	17'	•	16.	ELEV	'ATIO	N TO	P OF BO	RING	-37.1' N	ЛLLW		
7. DEPTH DRILLED INT	O ROCK	3'								BORING 100	%		
8. TOTAL DEPTH OF BO	ORING	57.1'		18.		I/A	RE AN	ID TITLE	OF INSF	PECTOR			
ELEV DEPTH	FII	ELD CLASSIFICATION (			% REC	Samp No.	RQD %			REMARKS		Blows/ 0.5 ft	N-Value
	<b>0':</b> Jet to 1	7'	-			S						<del> -</del>	
<u> </u>									ime: 15: ime: 15:				
$\frac{\pm}{\pm}$								Otop 1		00			
1													
<u> </u>													
<b>=</b>													
‡													
<u> </u>													
<u> </u>													
<b>I</b>													
‡													
薫													
+													
‡													
董													
+													
‡													
<u>                                   </u>													
-54.1 <del>+</del> 17.0 <del>+</del>	<b>17':</b> SAND	Y CLAYEY SILT (ML	), dark green.										
<b>基</b>	Calcareou	s (Copper Marl).	,, g · · ,			1							
#													
<b>+</b>													
-57.1 = 20.0													
	воттом	OF BOREHOLE AT -	57.1 ft										
	NOTE: So	ils visually field classi	fied in accordance										
	with the U	nified Soil Classificati	on System										

Boring Designation CHDVC-55-1-1-86

	DIVIS	ION	IN	STALL	ΔΤΙΩ	N	Borning Designation	SHEE		<del></del>
DRILLING LO		uth Atlantic Division					arbor		1 sн	
1. PROJECT			9.	COOR	DINA	TE S	YSTEM	VERTI	CAL	
Charleston Harbor	r Entrance	Channel Deepening					South Carolina NAD83	. N	1LLW	
2. HOLE NUMBER CHDVC-55-1-1-86		N COORDINATES 575.2718 E 2361368.46					ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY	•	0.0.20 2 200.0000		. TOT			S DISTURBED	UNDIST		
Ocean Surveys., I	Inc.					4	4	<u>:</u>	0	
4. NAME OF DRILLER  DMB			_				R CORE BOXES 0			
5. DIRECTION OF BORING	IG	DEG FROM BEARING VERTICAL					OUND WATER NA	COMPLETE	D	
INCLINED				. DATE			8/7/86 P OF BORING -32.1' MLL\		7/86	
6. THICKNESS OF OVERE 7. DEPTH DRILLED INTO		20' 0'					ECOVERY FOR BORING 100%	/ V		
8. TOTAL DEPTH OF BOR		52.1'	18			RE AN	ND TITLE OF INSPECTOR			
	KING	52.1		ľ	<mark>I/A</mark> ∘					Φ
ELEV DEPTH	FIELD	CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	: SILTY SAN	ID (SM), fine; gray, and shell oquina).								
							Start Time: 11:13 Stop Time: 11:33			
<b> </b>							Stop Time. 11.55			
<b> </b>										
									ŀ	
-37.0 ± 4.9	OI. CILTY CI	_AYEY SAND (SC), dark olive,			1					
	alcareous(Co									
9 9 9										
									-	
					2					
± ///										
					3					
± •/•/•									-	
					4				ļ	
-52.1 ‡ 20.0 <b>*///</b>	OTTOM OF	BOREHOLE AT -52.1 ft			4					
			••							
NO Wi	ith the Unifie	isually field classified in accordand d Soil Classification System	сe							
		•								

Boring Designation CHDVC-55A-1-1-86

DRILLIN	IC I	06	DIVISI				STALL			Dorning Doorgination	SHEE		1
	NG L	.00	So	uth Atlantic Di	vision					larbor		1 sh	EETS
1. PROJECT	Har	har Ent	ranco	Channel Dee	noning					YSTEM South Carolina NAD83	: VERTI	CAL <b>/ILLW</b>	,
Chanestor	ı ı ıaı	DOI LIII	iance	Charmer Dee	pering	_				E OF BIT	<del></del>		
	5A-1-	1-86		N COORDINATES 575.2718 E 2	2361368.46	(	OSI	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
<ol><li>DRILLING AG Ocean Sur</li></ol>						12	. TOT	AL SA	MPLE 1	ES DISTURBED 1	UNDIST	URBEI 0	)
4. NAME OF DR						_			JMBE	R CORE BOXES 0	•		
5. DIRECTION C	F BOI	RING		DEG FROM	BEARING	14	. ELE\	/ATIC	N GR	ROUND WATER NA			
VERTICA INCLINED	)			VERTICAL			. DATI			8/7/86		7/86	
6. THICKNESS (	OF OV	ERBURD	EN	16'		_				OP OF BORING -32.1' MLLW RECOVERY FOR BORING 60%			
7. DEPTH DRILL	ED IN	TO ROCK	<	4'						ND TITLE OF INSPECTOR			
8. TOTAL DEPT		BORING		52.1'				N/A					
ELEV DEPTH	LEGEND		FIELD	CLASSIFICATION (Descriptio			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-32.1	+-	<b>0'</b> : Jet t	to 17'					0)					_
± ± ± ±										Start Time: 12:02 Stop Time: 12:16			
-49.1 = 17.0		471.01	NDVC	L AVEV O'' T " :	N. dardar								
<u> </u>		Calcare	eous (C	LAYEY SILT (M ooper Marl).	L), dark green,			1	-				
-50.9 18.8							-						
<del>-                                    </del>		BOTTC	M OF I	BOREHOLE AT	-52 1 ft								
		NOTE:	Soils vi	isually field class	sified in accordanc	е							
		with the	e Unitié	d Soil Classificat	ıun əystem								

**Boring Designation** CHDVC-56-1-1-86

	DRILLING LOG  DIVISION South Atlantic Division						ATIO		Dorning Doorgination	SHEE		1
	LUG	Sou	uth Atlantic Div	vision					arbor		1 sн	
1. PROJECT	_ 			<u> </u>					YSTEM South Carolina NAD83	VERTI	CAL <b>1LLW</b>	_ ,
Charleston Ha	rbor	Entrance (	Cnannei Deep	ening	_				OF BIT	- IV	ILLVV	
2. HOLE NUMBER		LOCATION	COORDINATES						ER'S DESIGNATION OF DRILL			
CHDVC-56-1-1	1-86		56.8706 E 2	364292.804					500 Vibracore			
3. DRILLING AGENC		•			12.	TOTA	AL SA	_	•	UNDIST		)
Ocean Surveys 4. NAME OF DRILLER		iC.			1.0			4	4	<u>:</u>	0	
DMB	`				-				R CORE BOXES 0			
5. DIRECTION OF BC	RING		DEG FROM	BEARING	14.	ELEV	'ATIO	N GR	OUND WATER NA	COMPLETE	-	
		: \	VERTICAL		15.	DATE	BOF	RING	STARTED 8/6/86		5/86	
6. THICKNESS OF O	VERBI	IRDEN	20'	<u>.</u>	16.	ELEV	'ATIO	N TO	P OF BORING -33.3' MLL		,, 00	
7. DEPTH DRILLED IN			0'		17.	TOTA	AL CC	RE R	ECOVERY FOR BORING 100%			
					18.			RE AN	ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF	BORII	NG	53.3'			N	J/A				_	Φ
ELEV DEPTH B		FIELD C	CLASSIFICATION ( (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-33.3			D (SP-SM), fine;	gray, with shell								
	frag	gments, (Cod	quina).						Start Time: 10:41			
									Stop Time: 10:55			
							1					
1 👢							'					
1 🛊 🗾												
									Penetrometer = 1.5 TSF			
							2					
1 🛊 📙												
1 ‡ 1												
1 ‡												
							•					
							3					
‡												
-52.3 = 19.0												
-53.3 = 20.0	19': Cal	: SILTY CLA lcareous (Co	YEY SAND (SM	l), dark olive,			4					
-55.5 + 20.0			BOREHOLE AT -	53.3 ft								
	NO	TE: Soile vie	sually field classi	fied in accordance								
	with	n the Unified	Soil Classification	on System								

Boring Designation CHDVC-56A-1-1-86

DRILLING L		INSTALLATION SHEET 1															
1. PROJECT		South Atlantic Div	ision					arbor YSTEM	OF : VERTI	1 SHI	EETS						
	bor Er	ntrance Channel Deep	ening					South Carolina NAD83		1LLW							
O LIQUE NUMBER	<del></del>	00471011 0000001114750						OF BIT									
2. HOLE NUMBER CHDVC-56A-1-		OCATION COORDINATES N 325956.8706 E 2	364292.804					ER'S DESIGNATION OF DRILL 500 Vibracore									
3. DRILLING AGENCY				12.	TOTA	AL SA		DISTURBED 2	UNDIST								
Ocean Surveys 4. NAME OF DRILLER	s., inc.			2 : 2 : 0 13. TOTAL NUMBER CORE BOXES 0													
DMB			:	_				OUND WATER NA									
5. DIRECTION OF BO	RING	DEG FROM VERTICAL	BEARING					STARTED	COMPLETE								
INCLINED	(500)		:	15. DATE BORING 8/6/86 8/6/86  16. ELEVATION TOP OF BORING -33.3' MLLW													
6. THICKNESS OF OV				17. TOTAL CORE RECOVERY FOR BORING 100%													
	DEPTH DRILLED INTO ROCK 4'  TOTAL DEPTH OF BORING 53.3'						18. SIGNATURE AND TITLE OF INSPECTOR N/A										
										`@	<u>o</u>						
ELEV DEPTH P		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value						
-33.3	<b>0</b> ': Je	t to 16'															
<u>+</u>								Start Time: 11:19									
<u> </u>								Stop Time: 11:24									
<u> </u>																	
<u> </u>																	
+																	
<b>=</b>								D									
<b>⋣</b>								Penetrometer = 0.75 TSF									
+																	
単																	
=																	
薫																	
+																	
<b>=</b>																	
薫																	
-49.3 <del>1</del> 16.0	<b>16'</b> : S	AND (SP), fine; gray, and	shell fragments,			1											
-50.3 = 17.0	(Coqu <b>17':</b> C	iina). :LAYEY SANDY SILT (ML	.), dark green.			-					-						
🛓 🗾	Calca	reous (Cooper Marl).	•														
# #																	
						2											
-53.3 7 20.0	BOTT	OM OF BOREHOLE AT	53.3 ft								-						
	NOTE	E: Soils visually field class	fied in accordance														
	with th	ne Unified Soil Classificati	on System														

**Boring Designation** CHDVC-57-1-1-86

		DIVISION	INI	CTALL	٨ΤΙΟ	N.I	Borning Designation	CITE		
DRILLING L	INSTALLATION SHEET 1 Charleston Harbor OF 1 SHEETS									
1. PROJECT	oor Ent	South Atlantic Division	9.	COOF	DINA	TE S	YSTEM South Carolina NAD83	VERT		
Chanesion Hair	oor Ent	trance Channel Deepening					OF BIT	: N	/ILL V V	
2. HOLE NUMBER		OCATION COORDINATES					ER'S DESIGNATION OF DRILL			
CHDVC-57-1-1- 3. DRILLING AGENCY	-86 :	N 325672.3481 E 2366655.879		. TOT			500 Vibracore  ES : DISTURBED	UNDIST	URBEL	-
Ocean Surveys.	., Inc.				0,	4	4		0	
4. NAME OF DRILLER DMB			_				R CORE BOXES 0			
5. DIRECTION OF BOR	RING	DEG FROM BEARING VERTICAL	14	. ELE\	/ATIC	N GR	OUND WATER NA	COMPLETE	-D	
INCLINED		VERTICAL	15	. DATI	BOF	RING	9/10/86		0/86	
6. THICKNESS OF OVE	ERBURD	DEN 20'	-				P OF BORING -33.8' MLL	W		
7. DEPTH DRILLED IN	TO ROC	κ 0'					RECOVERY FOR BORING 100%  ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF B	ORING	53.8'	10		I/A	VE AIV	NO TITLE OF INOT ECTOR			
ELEV DEPTH		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-33.8		TY SAND (SM), fine; light gray, and shell			ა 1	_	USCS			
	fragme	ents, Calcareous (coguina).			'		Start Time: 13:30			
							Stop Time: 13:34			
-36.1 2.3	2.3': Cl	LAYEY SANDY SILT (ML), dark olive,								
#	Calcare	eous (Cooper Marl).								
<b>#</b>										
<u> </u>										
<b>±</b>					2					
<b>=</b>						-				
<u> </u>										
<b>±          </b>										
Ŧ III										
$\pm$					_	-			-	
<b>基</b>					3					
#										
<b>±</b>										
$\pm$										
<u> </u>										
<b>#</b>										
<b>=</b>					4					
<b>±</b>										
<b>‡</b>										
‡										
<u> </u>										
$\pm$										
-53.8 = 20.0	DOTTO									
		OM OF BOREHOLE AT -53.8 ft								
	NOTE:	: Soils visually field classified in accordan e Unified Soil Classification System	ce							
										- 1

**Boring Designation** CHDVC-58-1-1-86

DRILLING LO	26	DIVISION			STALL			Dorning Doorgination	SHEE	T ′	
	South Atlantic Division  PROJECT							arbor		1 sH	EETS
	or Entr	ance Channel Deep						YSTEM South Carolina NAD83	: VERTI	CAL <b>/ILLW</b>	
Chanesion Harbo	וום וכ	ance Channel Deep						OF BIT	: ''	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
2. HOLE NUMBER CHDVC-58-1-1-8		CATION COORDINATES  324652.386 E 23		11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY				12.	TOTA	AL SA	MPLE	•	UNDIST		
Ocean Surveys., 4. NAME OF DRILLER	Inc.				<b>TOT</b>		4	4		0	
DMB			-					R CORE BOXES 0			
5. DIRECTION OF BORIN	NG	DEG FROM	BEARING	14.	ELEV	ATIC	IN GR	OUND WATER NA : STARTED	COMPLETE	- D	
		VERTICAL		15.	DATE	BOF	RING	9/10/86		0/86	
6. THICKNESS OF OVER	RBURDE	. 20'	'	16.	ELE\	/ATIC	N TO	P OF BORING -37.7' ML			
7. DEPTH DRILLED INTO	) ROCK			17.	TOTA	AL CC	RE R	ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF BO		57.7'		18.			RE AN	ID TITLE OF INSPECTOR			
					1	<mark>√A</mark>				->-	<u>0</u>
ELEV DEPTH GEN		FIELD CLASSIFICATION ( Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-37.7	)': CLA	YEY SANDY SILT (ML),	dark olive,			1		USCS			
+	Jaicare	ous (Cooper marl).						Start Time: 14:23			
‡								Stop Time: 14:35			
<u> </u>											
+											
<b>基</b>											
#											
<b>‡</b>											
<b>±</b>						2					
± <b>         </b>											
<b>‡</b>											
⊥ Ⅲ											
#								Penetrometer = 1.25 TSF			
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‡						3					
<b>+</b>											
<b>± •</b>											
‡											
<b>=        </b>											
<u> </u>											
∄											
<b>‡</b>						4					
‡											
#											
<b>‡</b>											
<u> </u>											
‡											
<b>董</b>											
-57.7 <del>+</del> 20.0	ROTTO	M OF BOREHOLE AT -	57 7 ft								
	NOTE: S with the	Soils visually field classi Unified Soil Classification	tied in accordance on System								
			•								
											- 1

Boring Designation CHDVC-60-1-1-86

		DIVISION						Boring Design	ation	СПО		<u>/-   -  </u>
DRILLING L	nivision	INSTALLATION SHEET 1 Charleston Harbor OF 1 SHEET										
1. PROJECT		South Atlantic D	71131011					YSTEM		: VERTI		EEIS
Charleston Harb	or Entr	ance Channel Dee	epening	$\vdash$				South Carolina NA	D83	. N	1LLW	
2. HOLE NUMBER	:10	CATION COORDINATES	<u> </u>	1	-			OF BIT ER'S DESIGNATION OF D	NDII I			
		√ 323596.7441 E						500 Vibracore	KILL			
3. DRILLING AGENCY	•				. TOT		MPLE			UNDIST		
Ocean Surveys.  4. NAME OF DRILLER	, Inc.			40	TOT		4	R CORE BOXES 0	4	<u>:</u>	0	
DMB				-				CORE BOXES 0 OUND WATER NA				
5. DIRECTION OF BOR VERTICAL INCLINED	ING	DEG FROM VERTICAL	BEARING		. DAT			STARTED 9/10/8	C	OMPLETE 9/10	D 0/86	
6. THICKNESS OF OVE	RBURDE	EN 20'	•	16	. ELE	/ATIC	N TO	P OF BORING -35	5.2' MLLV	V		
7. DEPTH DRILLED INT	O ROCK	0'						ECOVERY FOR BORING				
8. TOTAL DEPTH OF BO	ORING	55.2'		18		IATUI <b>\</b> /A	RE AN	ID TITLE OF INSPECTOR	R			
											-t. 8⁄	e e
ELEV DEPTH		FIELD CLASSIFICATION (Descripti	on)		% REC	Samp No.	RQD %	REMA	RKS		Blows/ 0.5 ft	N-Value
-35.2	0': SANI fragmen	DY SAND (SM), fine; its, Calcareous (coqui	light gray, and shell na).			1		USCS				
		,						Start Time: 18:20			İ	
<b>⋣</b>								Stop Time: 18:30				
<b>                                      </b>												
<u> </u>												
▎ <del>▕</del>												
<b>│</b>												
						2						
<b>│</b>											-	
-41.9 = 6.7	6.7'· CL	AYEY SANDY SILT (I	ML) olive Calcareou	s								
	(Cooper		viz), olivo, odlodrood									
± III								Penetrometer = 0.75	TSF			
-44.2 = 9.0		(E) ( O) E) ( O ( ) ( O)										
		YEY SILTY SAND (SNous (Cooper marl).	/I), fine; olive,									
<b>#          </b>						3					İ	
<b> </b>						_					}	
<b>‡</b>												
<mark>⋕⋰</mark>												
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<b>│</b>												
-55.2 = 20.0	BOTTO	M OF BOREHOLE AT	-55.2 ft									
		Soils visually field clas Unified Soil Classifica										
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Boring Designation CHDVC-61-1-1-86

		DIVISION		INIC:	TALL	٨ΤΙΟ	N.I.	borning Designation	SHEET		$\overline{}$
DRILLING L	OG	South Atlantic Div	vision					arbor	OF 1		
1. PROJECT		- Coan / Marido Di		9. C	OOR	DINA	TE S	YSTEM	VERTIC	CAL	
Charleston Harb	or Entr	ance Channel Deep	ening					South Carolina NAD83	M	LLW	
2. HOLE NUMBER	:100	CATION COORDINATES						ER'S DESIGNATION OF DRILL			
CHDVC-61-1-1-		323703.075 E 23	70162.307	С	SI	Лod	el 15	500 Vibracore			
<ol> <li>DRILLING AGENCY         Ocean Surveys.</li> </ol>	Inc			12.	TOTA	L SA	MPLE 4	DISTURBED 4	UNDISTL	JRBED 0	·
4. NAME OF DRILLER	, 1110.			13	TOTA	J NL		R CORE BOXES 0		0	
DMB								OUND WATER NA			
5. DIRECTION OF BOR VERTICAL INCLINED	ING	DEG FROM VERTICAL	BEARING		DATE			<u></u>	MPLETEI 9/11		
6. THICKNESS OF OVE	RBURDE	EN 20'		16.	ELEV	ATIO	N TO	P OF BORING -39.5' MLLW			
7. DEPTH DRILLED INT	O ROCK	0'						ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B	ORING	59.5'		18.		атин <b>I/A</b>	RE AN	ND TITLE OF INSPECTOR			
ELEO DEPTH		FIELD CLASSIFICATION (			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	0': CLA	YEY SANDY SILT (ML)					<u> </u>	USCS			
		ous (Cooper marl).	dant onvo,			1					
								Start Time: 10:39 Stop Time: 10:46			
<b>=        </b>								Penetrometer = 1.5 TSF			
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<b>1</b>											
<b>*</b>					İ	2					
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<b>1</b>											
-59.5 = 20.0	DOTTO	M OF BODELIC: 5 :=	50.5.0								
	ROTTO	M OF BOREHOLE AT -	59.5 ft								
	NOTE: S	Soils visually field classi Unified Soil Classificati	fied in accordance								
	with the	Orimed Son Classificati	on Gyst <del>e</del> ili								
											- 1

Boring Designation CHDVC-62-1-1-86

		_ DIVISION	INIC	STALL	٨ΤΙΟ	.N.I	Borning Designation	CITIO		
DRILLING	South Atlantic Division					larbor	SHEE		1 EETS	
1. PROJECT			9. (	COOR	DINA	TE S	YSTEM	VERT		,
Charleston Ha	arb	or Entrance Channel Deepening					- South Carolina NAD83 E OF BIT	<u>: \</u>	/ILLW	′
2. HOLE NUMBER		: LOCATION COORDINATES					ER'S DESIGNATION OF DRILL			
CHDVC-62-1-							500 Vibracore			
<ol><li>DRILLING AGENCE Ocean Survey</li></ol>		Inc	12.	. TOTA	AL SA	MPLE 4	ES DISTURBED 4	UNDIST	URBEI 0	)
4. NAME OF DRILLE		, 1110.	13.	. TOTA	AL NU		R CORE BOXES 0	:		
5. DIRECTION OF BO	ODI	ING : DEG FROM : BEARING	14.	. ELE\	/ATIC	N GF	ROUND WATER NA			
S. DIRECTION OF BO VERTICAL INCLINED	OKI	VERTICAL	15.	. DATE	BOF	RING	STARTED C- 9/11/86	OMPLETE 9/1	D 1/86	
6. THICKNESS OF O	VE	RBURDEN 20'	16.	. ELE\	/ATIC	N TC	OP OF BORING -37.9' MLLW	<u> </u>		
7. DEPTH DRILLED I	INT	O ROCK 0'					RECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF	= B(	ORING 57.9'	18.		1/A	KE AI	ND TITLE OF INSPECTOR			
ELEV DEPTH		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-37.9		0': SAND (SP-SM), fine; gray and green, and shell				-	USCS			Z
		fragments, Calcareous (coquina).			1					
							Start Time: 11:32 Stop Time: 11:45			
l ‡ 📕										
l 🖶 📘										
l ‡ <b>•</b>										
						1				
1 🛓 📙					2					
-45.2 7.3		7.3': CLAYEY SANDY SILT (SM), dark olive,								
		Calcareous (Cooper Marl).								
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	+ [									
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<mark>∮</mark> ‡ <mark>;}</mark>	+									
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<u>-57.9 ‡ 20.0                                 </u>		BOTTOM OF BOREHOLE AT -57.9 ft								
		NOTE: Soils visually field classified in accordance with the Unified Soil Classification System								
		•								

**Boring Designation** CHDVC-63-1-1-86

DRILLING LOG  DIVISION South Atlantic Division					INSTALLATION SHEET 1							
1. PROJECT		South Atlantic Div	vision					arbor YSTEM	OF VERTI	1 shi	EETS	
	oor Ent	rance Channel Deep	ening					South Carolina NAD83		1LLW		
		•						OF BIT	•			
2. HOLE NUMBER CHDVC-63-1-1-	-86 : 1	CATION COORDINATES N 322904.4507 E 2	371973.487	(	IISC	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore				
<ol><li>DRILLING AGENCY Ocean Surveys</li></ol>				12.	TOTA	AL SA	MPLE 4	S DISTURBED 4	UNDIST	ORBEL	'	
4. NAME OF DRILLER DMB	, -			_				R CORE BOXES 0	·			
5. DIRECTION OF BOR	RING	DEG FROM	BEARING	14.	ELEV	'ATIO	N GR	OUND WATER NA : STARTED	COMPLETE	:D		
		VERTICAL		15.	DATE	BOF	RING	9/11/86		1/86		
6. THICKNESS OF OVE	ERBURDI	EN 20'	•	16.	ELEV	'ATIO	N TO	P OF BORING -27.3' MLL	W			
7. DEPTH DRILLED IN	TO ROCK	0'						ECOVERY FOR BORING 100%				
8. TOTAL DEPTH OF B	ORING	47.3'		18.		atuf <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR				
										t 8⁄	e P	
ELEV DEPTH B		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
-27.3		Y SAND (SM), fine, blu	sh gray, with shell									
<u> </u>	fragmer	nts, and organics.						Start Time: 13:04				
│								Stop Time: 13:07				
<u> </u>												
<u></u>												
<u> </u>						1						
Ĭ Ţ												
<mark>∤┆┼┆</mark>												
<u> </u>												
│ <u></u>												
<u> </u>						2						
│ <u></u>	11'- SII	.TY SAND, fine; light gre	on and shall									
<b>│</b>	fragmer	nts, Calcareous (coquina	a).									
<u> </u>												
│ <u></u>												
						3						
│ <del>॑</del> ॄ										}		
l ∄ <mark>¦¦¦¦</mark>												
│												
│ <del>                                    </del>												
▎ ▋ ▋												
<del>                                    </del>												
-47.3 <sup>‡</sup> 20.0						4						
	вотто	M OF BOREHOLE AT -	47.3 ft									
	NOTE:	Soils visually field class	fied in accordance									
	with the	Unified Soil Classificati	on System									

**Boring Designation** CHDVC-64-1-1-86

DDII LING I		INSTALLATION SHEET 1									
DRILLING I	LOG	South Atlantic Div	vision					arbor		<b>1</b> sн	EETS
1. PROJECT								YSTEM	VERTI		
Charleston Har	bor Enti	rance Channel Deep	pening					South Carolina NAD83  OF BIT	: IV	1LLW	
2. HOLE NUMBER CHDVC-64-1-1	-86 1	CATION COORDINATES N 321719.4726 E 2	372039.731	(	) ISC	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY Ocean Surveys				12.	TOTA	AL SA	MPLE 4	S DISTURBED 4	UNDIST	URBEI 0	)
4. NAME OF DRILLER DMB								R CORE BOXES 0			
5. DIRECTION OF BO	RING	DEG FROM VERTICAL	BEARING	14.	ELE/	/ATIC	N GR	OUND WATER NA : CO	MPLETE	.D	
INCLINED					DATE			9/11/86		1/86	
6. THICKNESS OF OV				_				P OF BORING -33.1' MLLW RECOVERY FOR BORING 100%			
7. DEPTH DRILLED IN		<del>-</del>			SIGN	IATUF		ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF		53.1'				<b>√A</b>				<b>76</b> 44	e
ELEV DEPTH OF STATE O		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-33.1	<b>0</b> ': SAN fragmer	D (SP-SM), fine; dark g	ray, and shell			2		Start Time: 13:40 Stop Time: 13:54			
<u> </u>	<b>18.5':</b> C Calcare	LAYEY SANDY SILT (Nous.	/IL), dark olive,			4					
-53.1 ‡ 20.0	BOTTO	M OF BOREHOLE AT -	·53.1 ft								
	NOTE:	Soils visually field class Unified Soil Classificati	ified in accordance								

Boring Designation CHDVC-65-1-1-86

	DIVISION					INSTALLATION SHEET 1							
DRILLIN	DRILLING LOG South Atlantic Division							larbor		1 SH	•		
1. PROJECT		. –		9.	COOF	DINA	TE S	YSTEM	: VERT	ICAL			
Charleston	Har	bor Enti	rance Channel Deepening	_				South Carolina NAD83	: N	ЛLLW	'		
2. HOLE NUMBER			CATION COORDINATES	11	. MAN	UFAC	TUR	ER'S DESIGNATION OF DRILL					
CHDVC-65- 3. DRILLING AGE			N 321847.8124 E 2373700.72		OSI . TOT			500 Vibracore ES DISTURBED	UNDIST	TIDDE			
Ocean Surv	eys/	., Inc.		12	101	AL OF	4	4	CINDIST	0	5		
4. NAME OF DRIL DMB	LER			13	. TOT	AL NU	JMBE	R CORE BOXES 0					
5. DIRECTION OF	BOI	RING	DEG FROM BEARING	14	. ELE	/ATIC	N GR	ROUND WATER NA	014B) ET				
			VERTICAL	15	. DAT	BO	RING	STARTED : C : 9/11/86 :	OMPLETE 9/1	בם 1/86			
6. THICKNESS O	F OV	ERBURDE	EN 19.2'	16	. ELE	/ATIC	OT NO	P OF BORING -34.4' MLLV	J				
7. DEPTH DRILLE	D IN	TO ROCK	0'					RECOVERY FOR BORING 96%					
8. TOTAL DEPTH	OF E	BORING	53.6'	18		1/A	KE AN	ND TITLE OF INSPECTOR					
ELEV DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
-34.4	Ť		Y SAND (SP-SM), fine; dark brown, with	1		ა 1	-	USCS					
‡		organic	S.			'	-	Start Time: 14:44					
1 =								Stop Time: 14:48					
1 ±													
-37.6 <del></del>	[]//	<b>3.2'</b> : CL	AYEY SAND (SC), fine; gray and brown		-								
1 =			- (,, -,, 3 -, -, -, -, -, -, -, -, -, -, -, -, -,			2							
-39.3 4.9		4 0': CII	TV SAND (SM) fine: light grov, and sh	NI .			-						
1 = 1		fragmer	LTY SAND (SM), fine; light gray, and shorts, Calcareous (coquina).	ell									
1 ±													
l	+												
<b>l</b>													
1 =						3							
1 = 1							1						
1 ‡													
<b>I</b>													
1 = 1													
1 = 1													
<u> </u>		<b>13.6'</b> : Li	ight green.										
<b>l</b>						4							
‡													
l													
<b> </b>													
‡													
I													
-53.6 + 19.2	+ [ +	BOTTO	M OF BOREHOLE AT -53.6 ft										
				00									
			Soils visually field classified in accordan Unified Soil Classification System	Le									
1													

Boring Designation CHDVC-66-1-1-86

	DIVISION	INIS	STALL	۸ΤΙΟ	N	SHE	V C-00	
DRILLING LOG	South Atlantic Division						- і 1 sн	1 FFTS
1. PROJECT	Court / Marine Division	9. (	COOF	DINA	TE S	YSTEM : VER	ΓΙCAL	
Charleston Harbor Ent	rance Channel Deepening		State	Pla	ne -	South Carolina NAD83	MLLW	'
						OF BIT		
	OCATION COORDINATES N 320852.8482 E 2373842.927					ER'S DESIGNATION OF DRILL 500 Vibracore		
3. DRILLING AGENCY	N 320032.0402 E 2373042.927		. TOT				TURBER	$\overline{}$
Ocean Surveys., Inc.				0,	4	4	0	
4. NAME OF DRILLER		13.	. TOT	AL NU	JMBE	R CORE BOXES 0		
DMB 5. DIRECTION OF BORING	: DEG FROM : BEARING	14.	. ELE\	/ATIC	N GR	OUND WATER NA		
VERTICAL INCLINED	VERTICAL	15.	. DATI	BOF	RING	STARTED COMPLET 9/11/86 9/	ED 11/86	
6. THICKNESS OF OVERBURDI	EN 18.5'	16.	. ELE\	/ATIC	ON TO	P OF BORING -39.1' MLLW		
7. DEPTH DRILLED INTO ROCK	· 0'					RECOVERY FOR BORING 93%		
8. TOTAL DEPTH OF BORING	57.6'	18.		I/A	KE AN	ND TITLE OF INSPECTOR		
ELEV DEPTH B	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-39.1 <b>0'</b> : CLA organic	YEY SANDY SILT (MH), black, with			1		USCS		
	<b>.</b>				1	Start Time: 15:31		
<u> </u>						Stop Time: 15:34		
<b>‡</b>								
-42.6 = 3.5								
<u>±</u> 3.5': SA	AND (SP), fine; and shell fragments,		1	2	1			
Calcare Cemen								
<b>‡</b>								
<u> </u>								
±								
<b> </b>								
<u> </u>								
+				3				
<b> </b>					1			
<b>+ - - - - - - - - - -</b>								
<u> </u>								
<u> </u>								
<b>*</b> ••••								
<u> </u>								
					1			
<b>+</b> ••••				4				
ļ <u>‡</u>								
<b>+</b>								
<u> </u>								
‡								
-57.6 ± 18.5								
	OM OF BOREHOLE AT -57.6 ft				•	•		
NOTE:	Soils visually field classified in accordance							
with the	e Unified Soil Classification System							

Boring Designation CHDVC-67-1-1-86

							Boring Designation	CUDA		$\overline{}$
DRILLING L	.OG	South Atlantic Division		STALL Char			larbor	SHEE"		EETS
1. PROJECT		Codin Additic Division	9. (	COOF	DINA	TE S	YSTEM	VERT	CAL	
Charleston Harb	oor En	trance Channel Deepening	_				South Carolina NAD83	<u> </u>	1LLW	
2. HOLE NUMBER	:10	OCATION COORDINATES					E OF BIT  ER'S DESIGNATION OF DRILL			
CHDVC-67-1-1-		N 320959.1933 E 2375520.922					500 Vibracore			
3. DRILLING AGENCY	Inc		12.	. TOT	AL SA	MPLE 4	ES DISTURBED 4	UNDIST	URBED	)
Ocean Surveys.  4. NAME OF DRILLER	., IIIC.		13	TOT	AL NI	-	R CORE BOXES 0	<u>:</u>	U	
DMB			_				ROUND WATER NA			
5. DIRECTION OF BOR VERTICAL INCLINED	RING	DEG FROM BEARING VERTICAL		. DATI				OMPLETE 9/1	D 1/86	
6. THICKNESS OF OVE	ERBURE	DEN 20'	16.	. ELE\	/ATIO	N TO	P OF BORING -30.2' MLLV	/		
7. DEPTH DRILLED IN	TO ROC	o' 0'					RECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B	ORING	50.2'	18.		IAТUН <b>\</b> /A	KE AN	ND TITLE OF INSPECTOR			
ELEV DEPTH		FIELD CLASSIFICATION OF MATERIALS (Description)	•	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-30.2	0': SIL	TY SAND (SP-SM), fine, gray, with shell			ഗ് 1	ш.	USCS			Z
	iragine	erno.							+	
‡ <b> </b>										
-33.4 3.2	<b>3.2'</b> : C	CLAYEY SANDY SILT (ML), gray.		-						
#		( ,, 3 - ,								
<b>T</b>					2					
+									+	
<u> </u>										
#										
<b>± 11</b>										
<u> </u>										
<b>±</b>										
<b>‡</b>					3					
<u> </u>									-	
#										
Ī										
<b>=        </b>										
#										
<u> </u>										
+										
-46.0 = 15.8	15 01.	SAND, fine; white, and shell fragments,								
	Calcar				4					
<u> </u>									İ	
-50.2 = 20.0	B∩TT	OM OF BOREHOLE AT -50.2 ft								
			_							
	with th	<ul> <li>Soils visually field classified in accordance</li> <li>Unified Soil Classification System</li> </ul>	е							
		-								

**Boring Designation** CHDVC-68-1-1-86

DRILLING L	OG	DIVISION		STALL					1
1. PROJECT		South Atlantic Division						OF 1 SH VERTICAL	IEETS
	bor Ent	trance Channel Deepening					South Carolina NAD83	MLLW	/
							OF BIT		
2. HOLE NUMBER CHDVC-68-1-1-		N 319768.2001 E 2375519.168				_	ER'S DESIGNATION OF DRILL 500 Vibracore		
3. DRILLING AGENCY	•			TOT/		MPLE	S DISTURBED U	NDISTURBE	D
Ocean Surveys 4. NAME OF DRILLER	., Inc.		10	TOT		4	4	0	
DMB			_				CORE BOXES 0 OUND WATER NA		
5. DIRECTION OF BOR VERTICAL INCLINED	RING	DEG FROM BEARING VERTICAL	-	. DATE				PLETED 9/11/86	
6. THICKNESS OF OV	ERBURD	EN 18.5'	16.	ELE\	/ATIC	N TO	P OF BORING -36' MLLW		
7. DEPTH DRILLED IN	TO ROCI	< 0'	_				ECOVERY FOR BORING 92%		
8. TOTAL DEPTH OF E	BORING	54.5'	18.		ATUF <b>1/A</b>	RE AN	ID TITLE OF INSPECTOR		
ELEO DEPTH GEORGE		FIELD CLASSIFICATION OF MATERIALS (Description)	<u> </u>	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-36 +	0': CLA	AYEY ORGANIC SILT (MH), gray, with.			ιχ	<u> </u>			z
<u> </u>	0.02	,, g.a,,							
<b>±</b>							Start Time: 08:19 Stop Time: 08:42		
<u> </u>							Penetrometer - 0.5 TSF		
-39.5 ± 3.5					1				
-39.5 = 3.5		LTY SAND (SP-SM), fine; with shell							
#	fragme	nts, cemented.							
1									
1 =									
Ī									
+					2				
1 1									
<u> </u>									
1 1									
‡									
Ī									
<u> </u>					3				
<u> </u>									
Ī									
+									
	16 8'- 0	SILTY SAND, fine; gray, cemented.							
‡	10.0.0	one in the stay, cemented.							
-54.5 18.5					4				
	BOTT	OM OF BOREHOLE AT -54.5 ft							
	NOTE:	Soils visually field classified in accordance							
	with the	e Unified Soil Classification System							

Boring Designation CHDVC-69-1-1-86

	DIVICION	INI	OTALI	٨ΤΙΟ		borning Designation C			
DRILLING LOG	DIVISION South Atlantic Division		STALL Char			arbor	SHEET OF 1	1 205	ЕТО
1. PROJECT	Coult Atlantic Divis					/STEM	VERTICAL		L13
	ntrance Channel Deepe	ening	State	Pla	ne -	South Carolina NAD83	MLL		_
2. HOLE NUMBER : I	LOCATION COORDINATES					ER'S DESIGNATION OF DRILL			
CHDVC-69-1-1-86		77202.163	OSII	Mod	el 15	500 Vibracore			
3. DRILLING AGENCY Ocean Surveys., Inc.		12	. TOTA	AL SA	MPLE 4	S DISTURBED 4	UNDISTURI 0	BED	
4. NAME OF DRILLER		13	TOTA	AL NU		R CORE BOXES 0	0		$\dashv$
DMB		14				OUND WATER NA			
5. DIRECTION OF BORING VERTICAL INCLINED	DEG FROM VERTICAL	BEARING	. DATE				MPLETED 9/11/8	6	
6. THICKNESS OF OVERBUR	DEN 20'	16	. ELE\	'ATIO	N TO	P OF BORING -36.5' MLLW			
7. DEPTH DRILLED INTO RO	СК 0'					ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF BORING		18		ATUF <b>J/A</b>	RE AN	ID TITLE OF INSPECTOR			
	FIELD CLASSIFICATION OF	- MATERIAL C					\dol_{\overline{\chi_0}}	<u>_</u> _	ne
ELEV DEPTH 9	(Description)	- MATERIALS	% REC	Samp No.	RQD %	REMARKS	Blows/	0.5	N-Value
-36.5 <b>0'</b> : SI	LTY CLAY (CL), dark gray,	with shells.		1		USCS			
						Start Time: 17:01			$\dashv$
<u> </u>						Stop Time: 17:02			
<b>=</b> ///						Penetrometer - 0.75 TSF			
<b>=</b> ///									
# ///									
$\equiv$				2					
+ ///									
<u> </u>									
# ///									
<u> </u>									
<b>=</b> ///				3					
<u> </u>									
‡ <i>(//)</i>									
+ ///									
# ///									
± ///				4					
<u> </u>				4					_
± ///									
± ///									
<u> </u>									
=======================================									
-56.5 <del>+</del> 20.0 BOT1	TOM OF BOREHOLE AT -5	6.5 ft				<u> </u>			
N∩TF	E: Soils visually field classific	ed in accordance							
with t	he Unified Soil Classification	n System							
									- 1

Boring Designation CHDVC-70-1-1-86

INSTALLATION SHEET 1
Charleston Harbor OF 1 SHEETS
9. COORDINATE SYSTEM VERTICAL
State Plane South Careline NAD22

DRILLING L	.og	South Atlantic Divi	ision	(	Char	lesto	on H		F 1 SH	I IEETS
1. PROJECT				9. 0	COOR	DINA	TE S	/STEM VE	RTICAL	
Charleston Hark	bor Entr	ance Channel Deepe	ening	_				South Carolina NAD83	MLLW	
2. HOLE NUMBER	:100	CATION COORDINATES						OF BIT ER'S DESIGNATION OF DRILL		
CHDVC-70-1-1-	-86 N	318893.5905 E 23	377381.37		OSLI	Иod	el 15	500 Vibracore		
<ol><li>DRILLING AGENCY Ocean Surveys</li></ol>				12.	TOTA	L SA	MPLE 4	S DISTURBED UNI	DISTURBEI 0	D
4. NAME OF DRILLER	., 1110.			13.	TOTA	L NL	•	R CORE BOXES 0		
DMB	NINO.	DEO EDOM	DEADING	-				OUND WATER NA		
5. DIRECTION OF BOR	KING	DEG FROM VERTICAL	BEARING	15	DATE	BOF	RING	STARTED COMPL		
☐ INCLINED								9/11/86 : 9/11/8	9/11/86	
6. THICKNESS OF OVE								ECOVERY FOR BORING 100%		
7. DEPTH DRILLED IN	TO ROCK	<del>-</del>						ID TITLE OF INSPECTOR		
8. TOTAL DEPTH OF B	BORING	57.3'		Ц,		I/A				
ELEV DEPTH B		FIELD CLASSIFICATION O (Description)			% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-43.3 6.0 -45.8 8.5	6': SANI fragmen  8.5': SIL fragmen	CEY SILT (MH), gray, with a diayers 1/2" apart  DY SILT (ML), light gray, ts, Calcareous.  TY SAND, fine; light grats, Calcareous (coquina)  M OF BOREHOLE AT -5  Soils visually field classificatio	with shell  y, and shell  7.3 ft ied in accordance			3		Start Time: 17:56 Stop Time: 18:02  Penetrometer = 0.25 TSF		

Boring Designation CHDVC-71-1-1-86

DRILLING L	റദ	DIVISION		- 1		ATIO			SHEET	1
1. PROJECT	.00	South Atlantic Di	vision						OF 1 S	SHEETS
	or Entr	rance Channel Dee	penina					South Carolina NAD83	MLL	
- Chanceton han	JO:	arios criaririos 200	pormig	_				OF BIT		
2. HOLE NUMBER		CATION COORDINATES	270004 000					ER'S DESIGNATION OF DRILL		
CHDVC-71-1-1-3. DRILLING AGENCY	-86 : 1	N 319018.931 E 23	379021.362				MPLE	500 Vibracore	NDISTURE	FD
Ocean Surveys.	., Inc.						4	4	0	
4. NAME OF DRILLER DMB				13.	TOT	AL NU	IMBEI	R CORE BOXES 0		
5. DIRECTION OF BOR	RING	DEG FROM	BEARING	14.	ELE\	/ATIC	N GR	OUND WATER NA	DI ETED	
		VERTICAL	:	15.	DATE	BOF	RING	STARTED COM	PLETED 9/12/80	3
6. THICKNESS OF OVE	ERBURDE	. 20'	•	16.	ELE\	/ATIC	N TO	P OF BORING -35.1' MLLW		
7. DEPTH DRILLED IN	TO ROCK	0'						ECOVERY FOR BORING 100%		
8. TOTAL DEPTH OF B	ORING	55.1'		<del> </del> 18.		IATUF <b>\/A</b>	RE AN	ID TITLE OF INSPECTOR		
Q		FIELD CLASSIFICATION	OF MATERIALS						/8/	ı en
ELEV DEPTH		(Descriptio	n)		% REC	Samp No.	RQD %	REMARKS	Blows/	N-Value
-35.1	0': CLA' fragmen	YEY SAND (SC), fine;	gray, with shell			1		USCS		
	naginoi	110.						Start Time: 08:40		
								Stop Time: 08:41		
± ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
						2				
-41.3 6.2 6.2	6 2': CI	AYEY SANDY SILT (M	II ) grav							
<u> </u>	<b>0.2</b> . 0L	7(121 0/1(D) 0121 (IV	.c), gray.							
‡										
<b></b>										
+										
<b>基</b>										
<b>±</b>						3				
<b>‡</b>										
<b>‡</b>										
‡										
<b>T</b>										
+										
<u> </u>										
						4				
<b>‡</b>										
<b>±</b>										
<u>±</u>										
‡										
<b>#</b>										
-55.1 = 20.0	BOTTO	M OF BOREHOLE AT	55 1 ft							
	NOTE: S	Soils visually field class Unified Soil Classificat	sitied in accordance ion System							
			-							

CHDVC-72-1-1-86

						Borning De	signation			<u> </u>			
DRILLING LOG	DIVISION		INSTA					SHEE	Т 1	1			
	South Atlantic Div	/ision				arbor		OF		EETS			
1. PROJECT						/STEM		: VERT					
Charleston Harbor En	trance Channel Deep	ening	Sta	te Pla	ane -	South Carolin	na NAD83	N	/LLW				
		_	10. SIZ	E AND	TYPE	OF BIT							
	OCATION COORDINATES N 317859.9423 E 2	379047.605				R'S DESIGNATION OF THE PROPERTY OF THE PROPERT	N OF DRILL						
3. DRILLING AGENCY			12. TO	TAL S	AMPLE	S D	ISTURBED	UNDIST	URBED				
Ocean Surveys., Inc.					4		4		0				
4. NAME OF DRILLER DMB						R CORE BOXES	0	•					
5. DIRECTION OF BORING	DEG FROM	BEARING	14. EL	EVAII	JN GR	OUND WATER	NA						
	VERTICAL		15. DA				9/12/86		ED 2/86				
6. THICKNESS OF OVERBURD	DEN		16. ELEVATION TOP OF BORING -38.6' MLLW										
7. DEPTH DRILLED INTO ROC	<b>`</b>				17. TOTAL CORE RECOVERY FOR BORING 100%  18. SIGNATURE AND TITLE OF INSPECTOR								
8. TOTAL DEPTH OF BORING						D ITTLE OF INSP	LCTOR						
ELEV DEPTH	Q Z FIELD CLASSIFICATION OF MATERIALS						REMARKS		Blows/ 0.5 ft	N-Value			
	TY CLAYEY SAND (SM)	fine: gray with		Samp No.	RQD %	USCS			$\vdash$	ᄼ			
	ragments, Shell fragments			1	4		40						
						Start Time: 09: Stop Time: 095							
shell fr				3									
10.4': \$	SAND (SP), fine; light gra	y, and shell		3	-								
	fragments, Calcareous (coquina) Cemented.				_								
-58.6 = 20.0	OM OF BOREHOLF AT -	58 6 ft											

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-73-1-1-86

DRILLING LOG	DIVISION			TALL				SHEE		
1. PROJECT	South Atlantic Div						arbor ⁄STEM	OF : VERT	1 SHI	EETS
Charleston Harbor Entr	ance Channel Deer						South Carolina NAD83		/ILLW	
	a 2.00p		10.	SIZE	AND	TYPE	OF BIT	•		
CHDVC-73-1-1-86 N	CATION COORDINATES N 318202.2101 E 2						er's designation of drill 500 Vibracore	_		
3 DRILLING AGENCY Ocean Surveys., Inc.			12.	TOTA	L SA	MPLE 4	S DISTURBED 4	UNDIST	URBED	
4. NAME OF DRILLER			13.	TOTA	L NU		R CORE BOXES 0	:		
DMB 5. DIRECTION OF BORING	: DEG FROM	BEARING	14.	ELEV	ATIO	N GR	OUND WATER NA			
S. DIRECTION OF BORING VERTICAL INCLINED	VERTICAL	BEARING	15.	DATE	BOR	RING	STARTED 9/12/86	COMPLETE 9/1	D 2/86	
6. THICKNESS OF OVERBURDE	EN 20'		16.	ELEV	ATIO	N TO	P OF BORING -38.5' MLI	_W		
7. DEPTH DRILLED INTO ROCK	0'						ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF BORING	58.5'		18.		атин I/A	KE AN	ID TITLE OF INSPECTOR			
ELEV DEPTH G	FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	YEY SANDY SILT (ML)				Sa	ă"			<u>m</u> O	Ż
		, 9					0			
#					1		Start Time: 10:42 Stop Time: 10:44			
				İ						
<b>‡</b>										
<u> </u>										
#										
<b>=</b>					2					
<u> </u>										
#										
<b></b>										
<b>+      </b>										
<u> </u>										
<b>±        </b>										
<b>+</b>					3					
<u> </u>					<u> </u>					-
-50.5 <del>+</del> 12.0										
± ,,,, 12': CLA	AYEY SAND (SC), fine;	gray, with shell								
tragmen	its.									
				Ì	4					
				-	-					
*/ <u>*/</u> */										
50.5										
-58.5 <del>7</del> 20.0 BOTTO	M OF BOREHOLE AT -	-58.5 ft								
NOTF: 9	Soils visually field class	ified in accordance								
with the	Unified Soil Classificati	on System								

Boring Designation CHDVC-74-1-1-86

DRILLING LO	G DIVISIO			1	STALL				SHEET		
1. PROJECT	Sou	th Atlantic Div	/ision					arbor ⁄sтем	OF 1	SHI	EETS
Charleston Harbo	r Entrance (	Channel Deep	ening		State	Pla	ne -	South Carolina NAD83		ILLW	
2. HOLE NUMBER CHDVC-74-1-1-86		COORDINATES 88.3241 E 2	380855.809					er'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY Ocean Surveys., I	nc			12.	TOTA	L SA	MPLE 4	S DISTURBED 4	UNDIST	URBED	)
4. NAME OF DRILLER  DMB				$\vdash$			MBE	R CORE BOXES 0	<del></del>		
5. DIRECTION OF BORING		DEG FROM VERTICAL	BEARING	14.	ELEV	ATIO	N GR	OUND WATER NA	OMPLETE	.D	
INCLINED					DATE			9/12/86	9/12	2/86	
6. THICKNESS OF OVER		20'		_				P OF BORING -41.5' MLLW ECOVERY FOR BORING 100%			
7. DEPTH DRILLED INTO		0'			SIGN	ATUF		D TITLE OF INSPECTOR			
8. TOTAL DEPTH OF BOR	RING	61.5'				I/A o					Φ
ELEV DEPTH B	FIELD C	LASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-41.5 <b>0'</b>	: CLAYEY SII	TY SAND (SC)	fine; gray.								
<u> </u>								Start Time: 11:39			
								Stop Time: 11:45			
						1					
										-	
-49.2 7.7											
7. wi	. <b>7':</b> SILTY SAI ith shell fragm	ND (SP-SM), fin ients, Calcareou	e; grayish green, s, cemented.								
<u> </u>	-					_				-	
基						2					
<b>=</b>											
#											
# #											
# #						3					
<b>=</b>											
± 1											
<u> </u>											
# 1											
<u> </u>											
<u> </u>						4					
-61.5 \(\frac{1}{2}\) 20.0 B(	OTTOM OF B	OREHOLE AT -	61.5 ft			•					
N	OTE: Soils vis		fied in accordance								
			<b>,</b>								

**Boring Designation** CHDVC-75-1-1-86

DRILLING L	OG	DIVISION			STALL				SHEET		
1. PROJECT	.00	South Atlantic D	vision	0.6	Char	lesto	on H	arbor YSTEM :	OF 1		EETS
	or Entr	ance Channel Dee	nenina					South Carolina NAD83		LLW	
- Chanceton han	50. E.I.I.	and charmer bec	pormig					: OF BIT			
2. HOLE NUMBER		CATION COORDINATES						ER'S DESIGNATION OF DRILL			
CHDVC-75-1-1- 3. DRILLING AGENCY	-80 : 1	N 316869.735 E 2	382809.858				MPLE	500 Vibracore	INDISTU	JRBED	,
Ocean Surveys.	., Inc.						4	4		0	
4. NAME OF DRILLER DMB				-				R CORE BOXES 0			
5. DIRECTION OF BOR	RING	DEG FROM	BEARING	14.	ELE	'ATIC	N GR	OUND WATER NA : COM	1PLETEI		
		VERTICAL		15.	DATE	BOF	RING	9/12/86	9/12		
6. THICKNESS OF OVE	ERBURDE	EN 20'	•	16.	ELE	'ATIC	N TO	P OF BORING -40.6' MLLW			
7. DEPTH DRILLED IN	TO ROCK	0'						ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B	BORING	60.6'		18.		атин <b>I/A</b>	RE AN	ID TITLE OF INSPECTOR			
O N		FIELD CLASSIFICATION	OF MATERIALS							ft (k)	lue
ELEV DEPTH B		(Description			% REC	Samp No.	%BD	REMARKS		Blows/ 0.5 ft	N-Value
-40.6		Y SANDY CLAY (CL),	gray, with shell								
# ///	rragmen	its, and organics.						Start Time: 13:21		-	
						1		Stop Time: 13:29			
<u> </u>											
<b>=</b> ///											
± ///											
# ///											
<b>=</b> ///						2					
$\pm$											
± 7.4											
-48.0 7.4	7.4': SIL	TY SAND, fine; light g	ray, and shell								
<b>†</b>	fragmen Cement	nts, Calcareous	•								
	Comone	ou.									
<b>†</b>						3					
<b>=</b>											
<u></u>											
<u> </u>											
						4					
<b>│</b>											
<del>                                    </del>											
-60.6 <sup>‡</sup> 20.0	BOTTO	M OF BOREHOLE AT	-60 6 ft								
	with the	Soils visually field class Unified Soil Classifica	tion System								

Boring Designation CHDVC-76-1-1-86

		DIVISION			INS	STALL	ATIO	N	DOIL	ig Do	Signatio	<u> </u>	SHEE		$\overline{}$
DRILLING L	.OG		n Atlantic Div	/ision	l				arbor					1 shi	
1. PROJECT Charleston Harl	bor En	trance Ch	nannel Deep	ening	9. (	COOR	DINA Pla	TE SY	South	Caroli	na NAD83	3	VERT	ICAL /ILLW	
			·						OF BIT						
2. HOLE NUMBER CHDVC-76-1-1	-86		OORDINATES 1.9575 E 2	383838.19	1				R'S DES		ON OF DRILL	_			
<ol><li>DRILLING AGENCY Ocean Surveys</li></ol>					12.	TOTA	AL SA	MPLE 4	S	1	DISTURBED 4		UNDIST	URBED	
4. NAME OF DRILLER DMB									R CORE		0	•			
5. DIRECTION OF BOF	RING		G FROM RTICAL	BEARING					OUND W	ATER START	NA FD	: 00	MPLETE	-D	
INCLINED						DATE				: :	9/12/86			2/86	
6. THICKNESS OF OV			20'		_				P OF BO		-41.3' BORING 10	MLLW 0%			
7. DEPTH DRILLED IN		K	0'			SIGN	ATUF		ID TITLE			0 70			
8. TOTAL DEPTH OF E	BORING		61.3'			١	<mark>√A</mark>								Φ
ELEV DEPTH B		FIELD CLA	ASSIFICATION ( Description)	-		% REC	Samp No.	RQD %			REMARKS			Blows/ 0.5 ft	N-Value
-41.3	0': CLA	YEY SILT	(ML), gray, win the first 1.5'.	ith shell fragments,											
#	and sa	na, Sana ii	ir tile ilist 1.5.							ime: 14:					
<b>‡</b>									Stop II	ime: 14:	24				
<u> </u>															
<b>並</b>															
							1								
Ī															
#															
<u> </u>															
<u> </u>															
-49.7 8.4				e; light gray, and											
<u> </u>	shell fr	agments, C	Calcareous (co	oquina).			2								
<u> </u>															
<u> </u>															
<u> </u>															
<u> </u>															
T T							3								
#															
# #															
1 1															
#															
<u> </u>															
<b>+</b>							4								
-61.3 = 20.0	ВОТТ	OM OF BO	REHOLE AT -	61.3 ft											
				fied in accordance											
	with the	e Unified S	Soil Classificati	on System											

-86

					<b>Boring Designation</b>	CHDVC-77	<u>7-1-1</u>
DRILLING LOG DIVISION South At		ISTALL					1
South At					arbor	OF 1 SH	IEETS
<ol> <li>PROJECT         Charleston Harbor Entrance Chan     </li> </ol>					YSTEM South Carolina NAD83	: VERTICAL : MLLW	,
		). SIZE	AND	TYPE	OF BIT	•	
2. HOLE NUMBER LOCATION COOF CHDVC-77-1-1-86 N 314988.4	_		-	_	ER'S DESIGNATION OF DRILL 500 Vibracore		
3. DRILLING AGENCY		2. TOTA	AL SA	MPLE	S DISTURBED	UNDISTURBE	D
Ocean Surveys., Inc.				3	3	0	
4. NAME OF DRILLER  DMB	<del>-</del>				CORE BOXES 0 OUND WATER NA		-
5. DIRECTION OF BORING DEG F VERTICAL VERTICAL VERTICAL	ROM BEARING	5. DATE				COMPLETED 9/12/86	
6. THICKNESS OF OVERBURDEN	15'	6. ELE\	/ATIO	N TO	P OF BORING -40.6' MLL		
7. DEPTH DRILLED INTO ROCK	U'				ECOVERY FOR BORING 81%		
8. TOTAL DEPTH OF BORING	55.6'		атин <b>1/А</b>	RE AN	ID TITLE OF INSPECTOR		
ELEV   DEPIH   岩	IFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-40.6 O': SILTY SAND (SP	-SM), fine; gray, and sand, of gray silty fine sand and gray		1		USCS		
sand	or gray silly line sand and gray				Start Time: 15:19 Stop Time: 15:26		
-43.2 = 2.6		1					
2.6': SAND (SP), fine fragments, Calcareou	e; light gray, and shell us (coguina)						
Loosely cemented.	(0044						
‡ <mark>::</mark>							
<u> </u>							
<u> </u>			2				
‡ 🚻							
‡ <mark>::</mark>							
<u> </u>							
<u> </u>							
‡ <mark>:.</mark>							
			3				
重							
<u> </u>							
<b>=</b>							
<u> </u>							
-55.6 = 15.0							
BOTTOM OF BORE	HOLE AT -55.6 ft				1		¹
NOTE: Soils visually	field classified in accordance						
with the Unified Soil (							
							l

SAW FORM 1836-A FEB 12

Boring Designation CHDVC-78-1-1-86

			DIVIDION	11116	TALI	^ TIO	. N. I	Borning Designation	CITION		
DRILLING	) L	.OG	South Atlantic Division		STALI Chai			larbor	SHEE	ı <i>-</i> 1 sн	1 EETS
1. PROJECT		_		9. (	COOF	DINA	TE S	YSTEM	VERTI	CAL	
Charleston F	larl	oor Entr	rance Channel Deepening					South Carolina NAD83	<u>: N</u>	/ILLW	'
2. HOLE NUMBER		: LO	CATION COORDINATES					ER'S DESIGNATION OF DRILL			
CHDVC-78-1			N 313489.6502 E 2387088.65					500 Vibracore			
3. DRILLING AGEN Ocean Surve		Inc		12.	. TOT	AL SA	MPLE 4	ES DISTURBED 4	UNDIST	URBEI	)
4. NAME OF DRILL		., 1110.		13.	TOT	AL NU		R CORE BOXES 0	<u>:</u>		
5. DIRECTION OF I	DOI	NNO	DEC FROM DEADING	14.	. ELE	/ATIC	N GR	ROUND WATER NA			
S. DIRECTION OF I	BOF	KING	DEG FROM BEARING VERTICAL	15.	. DAT	BO	RING	9/12/86		D 2/86	
6. THICKNESS OF	OVI	ERBURDE	EN 18'	_				P OF BORING -41.7' MLLV	<u>/</u>		
7. DEPTH DRILLED	) IN	TO ROCK	0'					RECOVERY FOR BORING 90%  ND TITLE OF INSPECTOR			
8. TOTAL DEPTH C	OF E	ORING	59.7'	10.		N/A	NL AI	ND TITLE OF INSPECTOR			
ELEV DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-41.7	_	0': SILT	Y SAND (SP-SM), fine; gray.			1		USCS			
1 ±	П					'		Start Time: 16:00 Stop Time: 16:16			
‡	П							Glop Time: 10:10			
l I	П		Y SAND, fine; tan, and shell fragments,								
1 ‡ 1	П	Loosely	ous (coquina) cementd.								
1	П										
‡	П										
1 🖠	П					_					
1 ‡	Н					2					
1 🖠 🛚	П										
1 =	П										
1 ±	П										
‡	П										
	Н										
‡	П	<b>9.5'</b> : Gra	ay.								
1 🗓	П					3					
‡	П										
1 =	Н										
1 ‡ 1	П										
1 =											
	П										
1 =	П										
‡	Н					4					
1 ±											
-59.7 = 18.0											
		вотто	M OF BOREHOLE AT -59.7 ft								
		NOTE:	Soils visually field classified in accordance Unified Soil Classification System	•							
		with the	Onned Jon Glassification System								
I											

**Boring Designation** CHDVC-79-1-1-86

DRII I ING I	DRILLING LOG  DIVISION South Atlantic Division							Ν		SHEE		1
	.00	So	uth Atlantic Div	vision					larbor YSTEM			EETS
1. PROJECT  Charleston Hark	hor Entr	ance	Channel Deer	pening					South Carolina NAD83	: VERT	ICAL <b>/ILLW</b>	,
Chancston han	DOI LIII	arioc	Onamic Deep	ocimig	_				E OF BIT	-		
2. HOLE NUMBER			N COORDINATES	200000 740					ER'S DESIGNATION OF DRILL			
CHDVC-79-1-1- 3. DRILLING AGENCY		1 313	262.1215 E 2	389300.746		JSI I			500 Vibracore  ES DISTURBED	UNDIST	TURRE	<u> </u>
Ocean Surveys					'-	1017	\L 0/	4	4	CINDIO	0	
4. NAME OF DRILLER DMB					13.	TOTA	AL NU	JMBE	R CORE BOXES 0			
5. DIRECTION OF BOR	RING		DEG FROM	BEARING	14.	ELE	/ATIC	N GR	ROUND WATER NA			
			VERTICAL	:	15.	DATE	BOF	RING	STARTED C	OMPLETE 9/1	ED 2/86	
6. THICKNESS OF OVE	FRBURDE	N.	20'	<del>:</del>	16.	ELE	/ATIC	N TO	P OF BORING -37.8' MLLW		2,00	
7. DEPTH DRILLED IN			0'		17.	TOTA	AL CC	RE R	RECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B			57.8'		18.			RE AN	ND TITLE OF INSPECTOR			
							<b>√</b> A 				76	Φ
ELEV DEPTH			CLASSIFICATION (Description	1)		% REC	Samp No.	RQD %			Blows/ 0.5 ft	N-Value
-37.8	0': SILT fragmen	Y SAN	ND (SP-SM), fine;	gray, with shell			1		USCS Start Time: 17:35			
	nagmon								Stop Time: 17:39			
1 🛓 📘												
	<b>3.2':</b> Red	d-Iron	stained.									
1 ‡												
1 ‡ 1							2					
								_				
1 ‡												
	9.3': SIL	TY SA	AND, gray, with ch	nert, 1/8" to 1/2"								
	triick lay	ers or	ciay i to 3 apai	l			3					
1 ‡ 1												
1 ±												
‡												
							4					
#												
1 ‡												
-57.8 = 20.0												
	BOTTO	M OF	BOREHOLE AT -	-57.8 ft								'
	NOTE: S	Soils v	isually field class	ified in accordance								
	with the	Unifie	d Soil Classificati	on System								

Boring Designation CHDVC-80-1-1-86

DRILLING	DRILLING LOG  DIVISION South Atlantic Division							N		SHEE		
1. PROJECT		,0	South Atlantic D	ivision					arbor YSTEM	OF : VERTI	1 SHI	EETS
	arbo	or Entran	ce Channel Dee	epening	_ ;	State	Pla	ne -	South Carolina NAD83		1LLW	
2. HOLE NUMBER CHDVC-80-1-			TION COORDINATES 11800.3416 E		11.	. MAN OSI	UFAC <b>Mod</b>	TURE el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
<ol><li>DRILLING AGENCE Ocean Survey</li></ol>		Inc.			12.	. TOT	AL SA	MPLE 4	S DISTURBED 4	UNDIST	URBED	)
4. NAME OF DRILLE DMB					-				R CORE BOXES 0	•		
5. DIRECTION OF BO	ORIN	NG	DEG FROM VERTICAL	BEARING					OUND WATER NA	COMPLETE	D	
INCLINED  6. THICKNESS OF O	W/FF	DUDDEN	20'			DATI			9/13/86 P OF BORING -39.7' MLL		3/83	
					_				ECOVERY FOR BORING 100%	• • • • • • • • • • • • • • • • • • • •		
7. DEPTH DRILLED I			0' 50.7'		18.			RE AN	ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF			59.7'	LOFMATERIALO			<mark>√A</mark> 9				t. s/	en
ELEV DEPTH			LD CLASSIFICATION (Description	on)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-39.7		': SAND (S Shell in top	SP), fine; gray, with 4".	shell fragments,			1		USCS			
	•								Start Time: 10:02 Stop Time: 10:04			
-41.9 2.2	2	2': SILTY	SAND (CL), gray,	with shell fragments,		-						
	3	random la	ayers of shell fragm	nents								
							2					
-47.9 8.2												
		.2': SAND hell fragm		gray, with silt, and								
		J										
<u> </u>							3					
<u> </u>												
<u> </u>												
-52.7 = 13.0												
<u> </u>			(SP), white, and sh	nell fragments,								
<del>                                   </del>		oosely cer										
+ +	•											
	•						4					
<u> </u>	•											
‡ :												
-59.7 = 20.0	٠											
			OF BOREHOLE AT									
	N N	IOTE: Soil vith the Un	s visually field clas ified Soil Classifica	sified in accordance tion System								

**Boring Designation** CHDVC-81-1-1-86 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL OSI Model 1500 Vibracore CHDVC-81-1-1-86 : N 311708.7211 E 2392086.141 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Ocean Surveys., Inc. 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **DMB** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 9/13/86 9/13/86 16. ELEVATION TOP OF BORING -39.9' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 59.9 N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39.9 0': SAND, fine; gray. USCS 1 Start Time: 10:39 Stop Time: 10:42 -42.0 2.1 2.1': SANDY CLAY, gray. 2 -47.7 ‡ 7.8 7.8': SILTY SAND, fine; light gray, and shell fragments, Calcareous (coquina). 3 4  $-59.9 \pm 20.0$ BOTTOM OF BOREHOLE AT -59.9 ft NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-82-1-1-86

		DIVISION	LINI	STALL	٨ΤΙΟ	NI	Borning Designation	CIIDV		
DRILLING L	.OG	South Atlantic Divis		-			arbor	SHEE OF		1 EETS
1. PROJECT	hor Entr	ance Channel Deepe	1 -				YSTEM South Carolina NAD83	VERTI	ICAL <b>/ILLW</b>	,
Onanestorrian	DOI LIII	ance Onamici Deepe					OF BIT			
2. HOLE NUMBER CHDVC-82-1-1-		CATION COORDINATES  \$\colon 309940.0092  \text{E} 239				_	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLING AGENCY	•	1 3033+0.0032 L 233		. TOT		MPLE	S DISTURBED	UNDIST		)
Ocean Surveys 4. NAME OF DRILLER	., Inc.		42	TOT	VI NII	4	E CORE BOXES 0	<u>:</u>	0	
DMB			14				OUND WATER NA			
5. DIRECTION OF BOF VERTICAL INCLINED	RING	DEG FROM I	BEARING	. DATE				OMPLETE 9/1:	ED 3/86	
6. THICKNESS OF OVI	ERBURDE	EN 20'	16	. ELE\	/ATIC	N TO	P OF BORING -40.7' MLLW			
7. DEPTH DRILLED IN	TO ROCK	0'					ECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF E	BORING	60.7'	18		1/ <b>A</b>	RE AN	ID TITLE OF INSPECTOR			
ELEV DEPTH		FIELD CLASSIFICATION OF (Description)	MATERIALS	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-40.7	0': SILT	Y SAND (SP), fine; gray.				-	USCS			Z
<u> </u>					1		Start Time: 11:20 Stop Time: 11:24			
-44.2 3.5										
<b>1</b>	<b>3.5</b> ': SA	NDY CLAY, gray, with she	ell fragments.							
					2					
-48.6 = 7.9	7.9': CL	AYEY SILT (MH), gray.								
<b>基</b>										
<b>1 1 1 1 1 1 1 1 1 1</b>										
重					3					
<b>+</b>										
<u> </u>										
▲ ■										
‡										
<b>=</b>										
1 #										
1 1					4					
事										
<u> </u>										
1 #										
-60.7 = 20.0										
	вотто	M OF BOREHOLE AT -60	).7 ft							
	NOTE: S	Soils visually field classifie Unified Soil Classification	ed in accordance Svstem							
		2.2.2.2.2.2	<b>y</b>							
1										

Boring Designation CHDVC-83-1-1-86

												Doning Designation	CITIO		
DRIL	LLIN	G L	00	G	DIVISION South	Atlantic D	ivision		STALL Char			arbor	SHEE"		1 EETS
1. PROJEC	CT				Count	ttiairtio D	17101011					YSTEM	VERT		
Charle	eston	Hark	oor	Entra	ance Cha	annel Dee	pening		State	Pla	ne -	South Carolina NAD83	. N	1LLW	
												OF BIT			
2. HOLE N	'C-83	-1-1-	-86			ORDINATES 4868 E	2395622.633	(	) ISC	Mod	el 15	ER'S DESIGNATION OF DRILL 500 Vibracore			
3. DRILLIN			۰۱	~~				12.	TOTA	AL SA			UNDIST		)
Ocean 4. NAME O			., 11	IC.				12	TOT	VI NIII	3	E CORE BOXES 0	<u>:</u>	0	
DMB								_				OUND WATER NA			
5. DIRECTI VER  INCL	TON OF RTICAL LINED	BOF	RING	3		FROM TICAL	BEARING		DATE			STARTED 0 9/13/86		D 3/86	
6. THICKN	IESS O	F OV	ERB	BURDEN	١	18'		16.	ELE	/ATIO	N TO	P OF BORING -40.7' MLLV	<u>V</u>		
7. DEPTH I	DRILLE	ED IN	TO F	ROCK		0'						ECOVERY FOR BORING 90%			
8. TOTAL [	DEPTH		BORI	ING		58.7'		18.		I/A	RE AN	ND TITLE OF INSPECTOR			
	EPTH	LEGEND				(Description	•		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-40.7	18.0		4': Ca Loo	SAND alcarou osly C	o, fine; whi s (coquina emented.	te, and she	shell fragments.  Il fragments,			2		Start Time: 12:00 Stop Time: 12:10			
			ВС	OTTOM	OF BOR	EHOLE AT	-58.7 ft								
			NC	TF. S	oile vieual	lv field clas	sified in accordanc	۵							

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation CHDVC-84-1-1-86

									Boring Designation	СПО	0-0-	<u> </u>
DF	RILLIN	IG L	_OG	DIVISION South Atlantic Division		STALI Chai			larbor	SHEET OF 1		l EETS
1. PRO					9.	COOF	DINA	TE S	YSTEM	VERTIO	CAL	
Cha	rleston	Har	bor Entr	ance Channel Deepening	_				South Carolina NAD83	. M	LLW	
	NUMBE			CATION COORDINATES	11	. MAN	UFAC	TUR	ER'S DESIGNATION OF DRILL			-
	OVC-84 LING AGE			N 307571.0104 E 2398030.182		OSI . TOT			500 Vibracore ES DISTURBED	UNDIST	IDBEL	$\leftarrow$
Oce	an Sur	veys	s., Inc.		12	. 101	AL 37	3	3	ONDIST	0	$oxed{oxed}$
4. NAME DME	OF DRI	LLER			13	. TOT	AL NU	JMBE	R CORE BOXES 0			
5. DIRE	CTION O	F BO	RING	DEG FROM BEARING	14	. ELE	/ATIC	N GR	ROUND WATER NA	COMPLETE	<u> </u>	
	CLINED			VERTICAL		. DAT			9/13/86	9/13		
6. THIC	KNESS O	F OV	ERBURDE	18'	-				P OF BORING -43.2' MLLV	N		
7. DEPT	H DRILLI	ED IN	TO ROCK	<u> </u>					RECOVERY FOR BORING 88%  ND TITLE OF INSPECTOR			
8. TOTA	L DEPTH		BORING	61.2'		1	N/A		T			0
ELEV	DEPTH	LEGEND		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-43.2 <sub>-</sub>			0': SILT fragmer	Y SAND (SM), fine; light gray, with shell					Start Time: 15:32			
=	=								Stop Time: 16:10			
-45.8	2.6		•									
				TY SAND (SP-SM), fine; light gray, and								
l <u> </u>			snell fra	gments, Calcareous (coquina).			1					
=	=											
=	<u> </u>											
=												
=												
] =							2					
=	-							_				
=	<u> </u>											
] =												
=												
=												
=	<u> </u>						3	-				
=	=						_	-			}	
] =												
=												
=												
-61.2 <sup>-</sup>	18.0	•	BOTTO	M OF BOREHOLE AT -61.2 ft								
				Soils visually field classified in accordance								
			with the	Unified Soil Classification System								

Boring Designation CHDVC-85-1-1-86

		DIVISION	INIC	STALL	۸٦١٨	NI	Borning Designation	SHEE		$\overline{}$
DRILLING L	OG.	South Atlantic Division					arbor		ı 1 1 sні	1 EETS
1. PROJECT			9. (	COOR	DINA	TE S	YSTEM	VERTI	CAL	
Charleston Hark	oor Ent	rance Channel Deepening					South Carolina NAD83	<u>:</u> IV	1LLW	
2. HOLE NUMBER		OCATION COORDINATES	11.	MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL			
CHDVC-85-1-1-	-86 : 1	N 307675.3747 E 2399694.2					500 Vibracore	LINDIOT	LIDDED	$\longrightarrow$
<ol> <li>DRILLING AGENCY Ocean Surveys.</li> </ol>	., Inc.		12.	TOTA	AL SA	MPLE 4	DISTURBED 4	UNDIST	0 URBEL	' <b> </b>
4. NAME OF DRILLER	,		13.	TOTA	AL NU	IMBE	R CORE BOXES 0			
DMB 5. DIRECTION OF BOR	RING	: DEG FROM : BEARING	14.	ELE\	'ATIC	N GR	OUND WATER NA			
		VERTICAL	15.	DATE	ВОР	RING	STARTED 9/13/86	COMPLETE Q/1	D 3/86	
6. THICKNESS OF OVE		;; EN 20'	16.	ELE	'ATIC	N TO	P OF BORING -41.9' MLL\		0,00	
7. DEPTH DRILLED IN			17.	TOTA	AL CC	RE R	RECOVERY FOR BORING 100%			
8. TOTAL DEPTH OF B		61.9'	18.		atuf <b>J/A</b>	RE AN	ND TITLE OF INSPECTOR			
									/s .+	e e
ELEV DEPTH B		FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %			Blows/ 0.5 ft	N-Value
-41.9	0': SILT fragmer	TY SAND (SM), fine; light gray, with shell			1		USCS Start Time: 13:31			
	naginoi						Stop Time: 17:51			
<del></del>	4': SII T	TY SAND, with shell fragments, Calcareous								
	(coquin									
					2					
<del></del>										
│ <del>                                    </del>										
▎ ▗ ▋										
					3					
<b>***</b>										
<b>│</b>										
Ĭ <u>[</u> []					4					
│ □ ■ □										
<b>│</b>										
-61.9 <sup>‡</sup> 20.0	DOTTO	DM OF BOREHOLE AT -61.9 ft								
	NOTE: with the	Soils visually field classified in accordance e Unified Soil Classification System								
		•								

Boring Designation CHDVC-86-1-1-86

			DIVISION	INI	STALL	٨ΤΙΟ	N.I	Borning Designation	CITE		
DRILLING	L	OG	South Atlantic Division		-			arbor	SHEE	т 1 sн	1 EETS
1. PROJECT				9.	COOR	DINA	TE S	YSTEM	VERTI	CAL	
Charleston Ha	arb	or Entr	ance Channel Deepening	<del></del>				South Carolina NAD83	<u>:</u> N	/ILLW	
2. HOLE NUMBER		:100	CATION COORDINATES					E OF BIT  ER'S DESIGNATION OF DRILL			
CHDVC-86-1-	-1-		I 305474.8066 E 2401671					500 Vibracore			
3. DRILLING AGENC		ln o		12	. TOT	AL SA		•	UNDIST		)
Ocean Survey 4. NAME OF DRILLE		, Inc.		13	TOTA	AI NII	4 IMBE	E CORE BOXES 0	<u>:</u>	0	
DMB				14				ROUND WATER NA			
5. DIRECTION OF BO VERTICAL	OR	ING	DEG FROM BEARIN	NG -	. DATI			STARTED C	OMPLETE		
INCLINED								9/13/86	9/1	3/86	
6. THICKNESS OF O	OVE	RBURDE	-					P OF BORING -39' MLLW RECOVERY FOR BORING 100%			
7. DEPTH DRILLED I	INT	TO ROCK	0'					ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF		ORING	59'			I/A					
ELEV DEPTH			FIELD CLASSIFICATION OF MATE (Description)	RIALS	% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-39			Y SAND (SP-SM), fine; gray, an	d shell		1		USCS			
🛔 📙		tragmen	ts, Calcareous.			'	-	Start Time: 18:32 Stop Time: 18:45			
1 ‡ 📘											
1 🕸											
						2					
1 🕸 📘						_					
1 ± •											
-46.5		7 El. CAI	ND (CD) area and shall fragme	nto	-						
	•	Calcared		erus,							
1 ‡ 🔂		Cemente	ed (coquina).								
l ‡											
	•					3					
l ‡											
	٠										
‡ 🔀											
	٠										
1 🛓 📙	•										
‡											
	•					4					
‡ 🔡	•										
	•										
‡ 🔀											
‡ :	•										
-59.0 = 20.0											
		BOTTO	M OF BOREHOLE AT -59.0 ft								
		NOTE: S	Soils visually field classified in a	ccordance							
		with the	Unified Soil Classification Syste	err)							

Boring Designation CHDVC-87-1-1-86

		D11 // O	1011		1 15 17		A = 10		borning Designation	CITEV		$\overline{}$
DRILLING L	_0	G So	ion outh Atlantic Div	/ision		STALL Char			larbor	SHEE'	т 1 1 sні	
1. PROJECT		<u>'</u>			9. (	COOR	DINA	TE S	YSTEM South Carolina NAD83	VERTI		
Charleston Har	od	r Entrance	Channel Deep	pening	_				OF BIT	- 10	/ILLVV	
2. HOLE NUMBER			N COORDINATES	400040.007	1			-	ER'S DESIGNATION OF DRILL			
CHDVC-87-1-1 3. DRILLING AGENCY		6 : N 305	854.1116 E 2	403049.687				el 15	500 Vibracore ES DISTURBED	UNDIST	URBED	
Ocean Surveys		Inc.						4	4	<u>:</u>	0	
4. NAME OF DRILLER DMB					_				R CORE BOXES 0			
5. DIRECTION OF BOI	RIN	IG	DEG FROM VERTICAL	BEARING					ROUND WATER NA	COMPLETE	ΞD	
INCLINED				<u>:</u>		DATE			9/14/86		4/86	
6. THICKNESS OF OV			20'		-				PP OF BORING -39.7' MLL\ RECOVERY FOR BORING 100%	<u>v</u>		
7. DEPTH DRILLED IN			0'			SIGN	ATUF		ND TITLE OF INSPECTOR			
8. TOTAL DEPTH OF E	BOF	RING	59.7'				<u>√</u>	Ι				Φ
PELEV DEPTH PER VELOCITY			CLASSIFICATION (Description	n)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-39.7		': SANDY SA agments, Ca	ND (SP-SM), gra	y, with shell			1		USCS Start Time: 8:25			
		agmomo, oa	ilouroouo.					_	Stop Time: 8:41			
# #								-				
# #							2					
<u> </u>												
-48.6 = 8.9	8.	.9': SAND (S	P), fine; with shel	I fragments,								
<u> </u>		alcareous emented.										
							3					
+ +												
							4					
<u> </u>												
-59.7 = 20.0	В	OTTOM OF	BOREHOLE AT -	59.7 ft								
				fied in accordance								
	W	ith the Unifie	d Soil Classificati	on System								

-89

								Boring Des	signation	CHDV	<u> 70-88</u>	<u>3-1-1</u>
DDII LING L	00	DIVISION		INS	STALL	ATIOI	N			SHEE	T 1	
DRILLING L	UG	South Atlantic Divi	sion	(	Char	esto	n H	arbor		OF	1 shi	EETS
PROJECT     Charleston Harb	or Enti	rance Channel Deepe	ening					YSTEM South Carolin	a NAD83	VERTI	CAL /ILLW	
	) O	and Chamie Book	,g					OF BIT		•		
2. HOLE NUMBER CHDVC-88-1-1-		CATION COORDINATES N 304182.5517 E 24	05050.111					R'S DESIGNATION 500 Vibracore	N OF DRILL			
3. DRILLING AGENCY Ocean Surveys.	•				TOTA				STURBED 2	UNDIST	URBED	)
4. NAME OF DRILLER  DMB	,						MBEF	R CORE BOXES	0	· · ·		
5. DIRECTION OF BOR VERTICAL INCLINED	ING	DEG FROM VERTICAL	BEARING		DATE			OUND WATER  STARTE  9	NA D /14/86	COMPLETE 9/1	ED 4/86	
6. THICKNESS OF OVE	RBURDE	EN 10'		_				P OF BORING	-38.8' ML	ĹW		
7. DEPTH DRILLED INT	O ROCK	0'						ECOVERY FOR BO		<b>)</b>		
8. TOTAL DEPTH OF B	ORING	48.8'		18.		l/A	RE AN	ID TITLE OF INSPE	CTOR			
ELEV DEPTH PROPERTY OF THE CENTRAL PROPERTY OF THE CEN		FIELD CLASSIFICATION O (Description)	F MATERIALS		% REC	Samp No.	RQD %	į į	REMARKS		Blows/ 0.5 ft	N-Value
		ND, fine; whitish gray, wious.	th shell fragments,			1 2		Start Time: 9:26 Stop Time: 9:34				
-48.8 + 10.0	DOTTO	M OF BOREHOLE AT -4	0.0.0									

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CHDVC-89-1-1-86

								Boring Designation	CHUV	<u> </u>	<u> </u>
DRILLIN	IC I	06	DIVISION	II	ISTALI	ATIO	N		SHEE	T '	1
	NG L	.00	South Atlantic Division				_	arbor	OF		EETS
1. PROJECT				9			_	YSTEM	VERTI		,
Charleston	Har	bor En	trance Channel Deepening					South Carolina NAD83	N	/ILLW	
								OF BIT			
2. HOLE NUMBE			OCATION COORDINATES					ER'S DESIGNATION OF DRILL			
CHDVC-89			N 303850.8722 E 2406493.2					500 Vibracore	•		
3. DRILLING AG Ocean Sur				1	2. TOT	AL SA	MPLE 2	ES DISTURBED 2	UNDIST	URBEI	)
4. NAME OF DR						A 1 A 11			≟	U	
DMB	ILLLIN			_				R CORE BOXES 0			
5. DIRECTION C	F BOI	RING	DEG FROM BEARING	1	4. ELE	/ATIC	N GR	ROUND WATER NA			
	L		VERTICAL	1	5. DAT	F BOI	RING	•	OMPLETE		
☐ INCLINED	)							9/14/86		4/86	
6. THICKNESS (	OF OV	ERBURD	DEN 7.5'	1	6. ELE'	/ATIC	OT NO	P OF BORING -39.9' MLLW	<u>/</u>		
7. DEPTH DRILL	FD IN	TO ROC	K 0'	1	7. TOT	AL CC	ORE R	RECOVERY FOR BORING 100%			
				1		_	RE AN	ND TITLE OF INSPECTOR			
8. TOTAL DEPTI		BORING	47.4'			V/A		T			
	LEGEND		FIELD CLASSIFICATION OF MATERIA	ALS	%	Samp No.		REMARKS		/S/	N-Value
L ELEV   DEPIN	EG		(Description)		REC	amb	RQD %	REWARKS		Blows/ 0.5 ft	> -
-39.9		0'· SAI	ND (SP), fine; gray, with shell fragme	ents		0)					
1 ±	• •	<b>0</b> . 0,	12 (et ), inte, gray, war enem nagine	51110.				Chart Times 44.00			
								Start Time: 11:08 Stop Time: 11:12			
<b>l</b> ±								Ctop Time: TTTE			
1 ±											
1 ±											
Ŧ											
I Ŧ											
I											
1 ‡											
<b>+</b>											
1 ‡						1					
-45.3 + 5.4	•						1				
40.0   0.4		<b>5.4</b> ': S	ANDY SAND (SP-SM), fine; gray, w	ith shell	-						
1 ±		fragme	ents, Calcareous.	0							
1 ±		-									
1 ±							1				
						2					
-47.4 7.5		DOTT	ON OF BODELIOLE AT AT AT								
		ROLE	OM OF BOREHOLE AT -47 4 ft								

BOTTOM OF BOREHOLE AT -47.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** CR-CH-1-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Athena Technologies Vibracore System 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-CH-1-94 N 341505.375 E 2343166.273 N/A 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **GWC** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/19/94 8/19/94 16. ELEVATION TOP OF BORING -40.65' MLLW 6. THICKNESS OF OVERBURDEN 13' 17. TOTAL CORE RECOVERY FOR BORING 69% 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53.65 N/A N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32 0': SILTY SAND (SM), fine; green to gray, wet, and shell fragments. *-*43.7≢ 3.0 3': FAT CLAY (CH), green to gray, moist, little shell fragments, trace fine sand. *-*45.7≢ 5.0 5': SILT (ML), gray, moist, trace fine sand, no shell 69 <u>-50.7</u> 10.0 10': SILT (OL), gray, with organics, no shell fragments, "ancient marsh deposit". -53.7‡ 13.0 BOTTOM OF BOREHOLE AT -53.7 ft

**Boring Designation** CR-CH-2-94 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT Athena Technologies Vibracore System 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL CR-CH-2-94 N 341480.377 E 2338086.741 N/A 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED Athena Technologies 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 **GWC** 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/22/94 8/22/94 16. ELEVATION TOP OF BORING -26' MLLW 6. THICKNESS OF OVERBURDEN 20' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 46' N/A N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp REMARKS RQD % REC (Description) -26 0': SANDY SILT (ML), gray, and shell fragments. -29.0 = 3.0 3': SILTY SAND (SM), medium to coarse; gray, and shell fragments, organic odor. -33.0∓ 7.0 7': CLAYEY SILTY SAND (SM), fine; black, with organics, and shell fragments. 10': CLAYEY SILTY SAND (SM), fine; black, with organics, trace shell fragments, some silt strata or lenses. -46.0<sup>±</sup> 20.0 20': SILTY SAND (SM), gray, trace shell fragments. -53.0 27.0 BOTTOM OF BOREHOLE AT -46.0 ft

**Boring Designation** EC-100-90

									Borning Boolgination		0 00	
DRIL	LING I	LOG	DIVISION		l	STALL		1- al a	SHEE		1	
			South Atlantic Div	/ision					arbor	OF '		EETS
1. PROJECT Charles		bor En	trance Channel Deep	enina					YSTEM South Carolina NAD83	: VERTI	cal <b>1LLW</b>	
				3	10	. SIZE	AND	TYPE	OF BIT 1-3/8" Splitspoon w/	5 1/2" Fi	shtail	
2. HOLE NU	MBER	: L(	OCATION COORDINATES						ER'S DESIGNATION OF DRILL			
EC-100			N 308333.6665 E 2	396449.976		Failir			_			
3. DRILLING U.S. Co			ers - Savannah Distric	ct	12	. TOT	AL SA	MPLE 6	DISTURBED 6	UNDIST	URBEI	)
4. NAME OF					13	TOT	AI NI		R CORE BOXES ()	-		
C.D. Ju									ROUND WATER NA			
5. DIRECTIC  VERT  INCLI	ICAL	RING	DEG FROM VERTICAL	BEARING		. DATE				COMPLETE	D 5/90	
<u> </u>		/EDDLIDE	)	<del>:</del>	16	FI F\	/ATIC	N TO	P OF BORING -46.9' MLL		,,,,,	
6. THICKNES	55 OF O	EKBUKL			-				RECOVERY FOR BORING N/A	· ·		
7. DEPTH DI	RILLED IN	NTO ROC	κ 0'						ND TITLE OF INSPECTOR			
8. TOTAL DE	EPTH OF	BORING	55.9'		10				rthur, Geologist			
					l			<del>                                      </del>			>=	<u>o</u>
ELEV DEF	HTQ		FIELD CLASSIFICATION (Description			% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
-46.9	•/•/		TY GRAVEL (GM), medi						USCS			
‡ ‡		gray, w Calcar	vet, some sand, and shell eous.	I fragments,			1		NOTE: Suspect thin limestone I from 46.9' to 55.9' w/ large amo ofshell fragments			14
#		<b>1.5</b> ': S	hell fragments.				2		Set 6" casing by own weight ot Mixed Zeogel drilling mud at 46 Weight of rods drove splitp\spor	.9'.		3
		<b>3'</b> : Sor	ne shell fragments.				3		46.9 to 47.6, cont'd to 48.4.			21
#		<b>4.5</b> ': S	hell fragments, trace clay				4					2
							5					1
-55.9 9	.0						6					6

BOTTOM OF BOREHOLE AT -55.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-101-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-101-90 N 309963.4578 E 2395489.598 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/9/90 3/9/90 16. ELEVATION TOP OF BORING -40.2' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.2\_ 0': SILTY SAND (SM), fine to medium; brown, wet, USCS some shell fragments, Calcareous. Set 6" casing by own weight to 41.2'. 1 20 Weight of rods drove splitspoon from 40.2' to 40.6', cont'd drive to 41.7'. 1.5': Gray. NOTE: Suspect thin limestone layers 2 from 46.2' to 55.2'. 24 3 25 4.5': Trace shell fragments. 4 28 6': SAND, medium to coarse; gray and light gray, some shell fragments, trace gravel, (Limestone 5 65 gravel). 7.5': Light gray. 6 30 9': Trace clay, and shell fragments. 7 28 10.5': No clay. 8 28 12': Trace gravel, (Limestone gravel). 9 26 27 10 <u>-55.2</u> + 15.0 BOTTOM OF BOREHOLE AT -55.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-102-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-102-90 N 309188.3225 E 2394864.752 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/10/90 3/10/90 INCLINED 16. ELEVATION TOP OF BORING -45.3' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.3\_ 0': SAND (SP), medium to coarse; tannish gray, USCS Poorly Graded, wet, with shell fragments, Set 6" casing by own weight to 46.3'. 1 10 Weight of rods drove splitspoon from 45.3' to 45.9'. -46.8 1.5 1.5': SAND (SM), medium to coarse; light gray, wet, Mixed new Zeogel mud at 48.3'. with shell fragments, Calcareous. 2 31 NOTE: Suspect thin limetone layers from 49.8' to 55.8'. 3': Shell fragments, with gravel, (Quartz gravel). 3 47 -49.8 4.5 4.5': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some coarse sand, trace shell fragments, 4 43 Calcareous. -51.3 6.0 6': SILTY SAND (SM), medium to coarse; light gray, wet, some gravel, trace shell fragments, Calcareous 5 62 (Limestone gravel).

6

7

BOTTOM OF BOREHOLE AT -55.8 ft

7.5': Trace gravel, (Limestone gravel).

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-55.8  $\mp$  10.5

51

53

**Boring Designation** EC-103-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 **MLLW** 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 310993.0609 E 2393659.332 Failing 314 EC-103-90 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL VERTICAL 15. DATE BORING 3/10/90 3/10/90 16. ELEVATION TOP OF BORING -46' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, Geologist ELEV DEPTH 3 lows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS REMARKS REC & 8% (Description)

l		Ÿ	(Description)		Sar	× °		m °	ż
-46 -	9.0 3.0		<b>0':</b> SAND (SP), fine to medium; gray, Poorly Graded, wet, trace silt, with shell fragments, Slightly calcareous		1		USCS Set 6" casing by own weight to 49.9'. Mixed Zeogel mud at 46.0'. Weight of hammer drove splitspoon from 46.0' to 46.9', cont'd drive to 48.2' w/ one hammer blow,con't drive to 49.0' w/ 8 blows. Weight of hammer drove splitspoon from 49.0' to 50.5', cont'd to 51.0' w/ 8 blows then from 51.0' to 52.0' w/ 19 blows.		9
-			<b>3':</b> CLAY (CH), high plasticity; dark gray, wet, high plasticity, trace sand, and shell fragments.	]		1 1		0	
-			plasticity, trace saria, and shell magnificates.		2			0	8
-50.5 -	4.5					]	NOTE: Suspect thin limestone layers from 50.5' to 55.0'.	8	
1			4.5': SILTY SAND (SM), medium to coarse; light gray, wet, some gravel, trace shell fragments, Calcareous (Limestone gravel).  6': Trace gravel, (Limestone gravel).		3				19
					4				23
-55.0	9.0				5				18

BOTTOM OF BOREHOLE AT -55.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-104-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-104-90 N 310642.7595 E 2392259.376 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 3/10/90 3/10/90 INCLINED 16. ELEVATION TOP OF BORING -41.7' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.7\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace silt, and shell fragments, Slightly Set 6" casing by own weight to 43.7'. 1 3 Calcareous. Weight of rods drove splitspoon from 41.7', cont'd to 43.2' w/ 3 blows, to 43.7' w/ 5 blows & to 44.7' w/ 27 blows. Mixed new Zeogel mud at 44.7' 2 Sample #4 taken from 45.7'to 46.2'. 32 Weight of hammer drove splitspoon from 46.2' to 48.5', cont'd drive to 49.2' -44.7 3.0 w/ 5 blows. 3': SILTY SAND (SM), fine to medium; gray, wet, trace clay, and shell fragments. 3 15 NOTE: Suspect thin Limestone later from 49.2'-55.2'. 4 -46.2 4.5 4.5': CLAY (CH), high plasticity; fine to medium; dark gray, moist, high plasticity, trace sand, and shell fragments. 5 5 -49.2 7.5 7.5': SILTY SAND (SM), medium to coarse; light gray, wet, trace gravel, and shell fragments, 6 22 Calcareous (Limestone gravel). 9': Yellow and light gray, trace shell fragments, and gravel, (Limestone gravel). 7 26 8 19 12': Tan. 9 16 <u>-55</u>.2  $\downarrow$ BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.2 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-105-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-105-90 N 312032.6449 E 2391734.063 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 0 12 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/11/90 3/11/90 INCLINED 16. ELEVATION TOP OF BORING -35.2' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -35.2-0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace silt, some shell fragments, Set 6" casing by own weight to 37.8'. Weight of rods drove splitspoon from 1 9 35.2' to 37.0', ocnt'd drive to 38.2'. Weight of rods drove splitspoon from 44.2 to 46.0 &47.2 to 48.7, cont'd to 50.2'. 3': Trace shell fragments. NOTE: Suspect thin limestone layers 2 27 from 48.7' to 54.7'. LAB CLASSIFICATION 36 3 Sample No.3 - SP-SM 4 31 5 33 -44.2 9.0 9': CLAY (CH), high plasticity; dark greenish gray, moist, high plasticity, and shell fragments. 6 0 7 5 8 0  $-48.7 \pm 13.5$ 13.5': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, trace shell fragments, 9 25 Calcareous (Limestone gravel). 15': Trace clay. 5 10 16.5': No clay.. 11 18 29 12 -54.7±19.5 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-106-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 311612.3806 E 2390499.127 EC-106-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 3/11/90 3/11/90 INCLINED 16. ELEVATION TOP OF BORING -40.8' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, with shell fragments, trace silt, Set 6" casing by own weight to 45..1'. 1 7 Calcareous. Weight of hammer drove splitspoon from 49.8' to 51.3', & 52.8' to 54.3'. 2 NOTE: Suspect thin limestone layers 13 from 54.3' to 55.8'. -43.8 3.0 3': CLAY (CH), high plasticity; gray, moist, high plasticity, trace sand, and shale fragments. 3 5 4 5 2 5 6 6 7 0 8 6 -52.8 12.0 12': CLAYEY SAND (SC), fine to medium; gray, wet, with shells, and shell fragments, Calcareous. 0 9 -54.3 -13.5 13.5': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, 10 14 Calcareous (Limestone gravel).. -55.8  $\pm$  15.0 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-107-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-107-90 N 312882.3068 E 2390163.846 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/11/90 3/11/90 INCLINED 16. ELEVATION TOP OF BORING -39.2' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.2\_ 0': SILTY SAND (SM), fine to medium; gray, wet, USCS with shell fragments, trace clay, Slightly calcareous. Set 6" casing by own weight to 40.4'. 1 13 Weight of rods drove splitspoon from 39.2' to 39.5', 42.2' to 44.1', 45.2' to 47.2', & 48.2' to 50.7'. 2 29 Mixed new Zeogel at 48.2'. -42.2 3.0 **3':** CLAY (CH), high plasticity; gray, wet, high plasticity, with shell fragments, trace sand. LAB CLASSIFICATION Sample No 1 - SM 3 5 2 4 9': Some sand, and shell fragments. 5 0  $-49.7 \pm 10.5$ 10.5': CLAYEY SAND (SC), fine to medium; gray, wet, some shell fragments. 6 0 7 11 8 5 15': SAND, medium to coarse. 6 24 <u>-55.7 ∓ 16.5</u> BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.7 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-108-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-108-90 N 312342.0696 E 2389048.938 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 0 10 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL VERTICAL 15. DATE BORING 3/19/90 3/19/90 INCLINED 16. ELEVATION TOP OF BORING -41' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH REMARKS ELEV Samp RQD % REC (Description) 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace silt, with shell fragments, Set 6" casing by own weight to 41.3'. 1 7 Calcareous Mixed Zeogel mud at 44.0'. Weight of rods drove splitspoon from 44.0 to 45.5 & 45.5 to 46.5. Had poor recovery from 50.0' to 53.0' & 2 very poor recovery from 54.5' to 56.0'. 13 -44.0 -3.0 3': CLAY (CH), high plasticity; gray, moist, high plasticity, with shell fragments, trace sand, Slightly 3 0 calcareous. -45.5 4.5 4.5': CLAYEY SAND (SC), fine; gray, moist, trace shell fragments, Slightly calcareous. 4 2 6': SAND, fine to medium; gray, wet, with shell fragments, Calcareous. 5 13 -48.5 7.5 7.5': SILTY SAND (SM), medium to coarse; gray, with shell fragments, Calcareous. 6 26 9': SAND, fine to medium; trace shell fragments. 7 7 10.5': Trace shell fragments. 8 19 -53.0 12.0 12': SAND (SP), medium to coarse; gray, Poorly Graded, some shell fragments, trace silt, Calcareous. 9 18 -54.5 13.5 13.5': GRAVEL (GP), fine to coarse; gray, trace sand, and sand, (Quartz gravel). 10 3  $-56.0 \pm 15.0$ BOTTOM OF BOREHOLE AT -56.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

EC-109-90 **Boring Designation** INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-109-90 N 313851.9299 E 2388408.601 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/22/90 3/22/90 INCLINED 16. ELEVATION TOP OF BORING -40' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40 0': SILTY SAND (SM), fine; brown, wet, some shell USCS fragments, trace clay, Slightly calcareous... Set 6" casing by own weight to 40.8'. 1 18 Mixed new batch of Zeogeldrilling mud 1.5': SILTY SAND, fine; gray, wet, Calcareous... NOTE: No splitspoon recovery on first 2 attempt from 43.0' to 44.5' & 44.5' to 20 46.0', did not wash out hole, re-drove from 43.0' to 47.5' & recovered large amount of small shell fragments. 3': Shell fragments, See remarks... Sample #3 taken from 43.0' to 47.5'. Wash return contained large amount of shell fragments. 53.5' to 55.0' suspect thin limestone layers. LAB CLASSIFICATION 3 31 Sample No. 2 - SP-SM -47.5 7.5 7.5': CLAYEY SAND (SC), medium to coarse; gray, wet, with shell fragments, trace gravel, Slightly 4 5 calcarous. (Limestone gravel).. 5 12 10.5': SAND, fine; trace shell fragments, No gravel.. 6 3 12': SAND, fine to medium; gray to light gray, trace shell fragments, and gravel, Calcareous. 7 18 (Limestone gravel)..  $-53.5 \mp 13.5$ 13.5': SILTY SAND (SM), medium to coarse; light gray to white, wet, trace gravel, (Limestone gravel)... 24 8 -55.0 <del>+</del> 15.0 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-110-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-110-90 N 313351.6972 E 2387308.684 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/22/90 3/22/90 16. ELEVATION TOP OF BORING -41.2' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.2\_ 0': CLAY (CH), high plasticity; greenish gray, wet, USCS high plasticity, some sand, trace shell fragments, Used Zeogel drilling mud. 1 0 Slightly calcareous.. Set 6" casing by own weight to 46.1'. Weight of rods drove splitspoon from 41.2' to 44.3'. Pulled tools from hole & cleaned to 44.2'. Weight of rods from 2 0 44.2' to 46.2'. NOTE: Suspect thin limestone layers 3': Some shell fragments. starting at 47.2'. 3 0 4.5': Trace shell fragments. 4 5 -47.2 6.0 6': SILTY SAND (SM), fine to medium; light gray, wet, trace shell fragments, and gravel, Calcareous 5 18 (Limestone gravel).. 6 17 9': SILTY SAND, fine to medium; yellowish brown, moist, Calcareous. 7 14 10.5': Trace gravel. 8 14 9 15 -54.7 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.7 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

Boring Designation EC-111-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-111-90 N 314626.6268 E 2386992.405 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 0 10 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL VERTICAL 15. DATE BORING 3/22/90 3/22/90 INCLINED 16. ELEVATION TOP OF BORING -40.5' MLLW 6. THICKNESS OF OVERBURDEN 15 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -40.5 0': SILTY SAND (SM), fine; gray, wet, Calcareous. USCS Used Zeogel drilling mud. 1 17 Set 6" casing by own weight to 41.3'. -42.0 1.5 1.5': SAND (SP), medium to coarse; gray, wet, NOTE: Large amount of small to large trace silt, and gravel, Calcareous. 2 shell fragments from 42.0' to 43.5' & 2 small shell fragments from 43.5' to 45.0', trace of small shell fragments -43.5 3.0 3': CLAYEY SAND (SC), fine to medium; gray from 48.0' to 51.0' & some from 57.0' to yellowish brown, wet, with shells, Calcareous. 3 10 Suspect thin limestone layers from 49.5' -45.0 4.5 to 55.5'. 4.5': SILTY SAND (SM), fine to medium; yellowish brown, moist, trace gravel, Calcareous. 4 19 42 5 7.5': Yellowish brown to light gray, with shells. 6 34 9': SILTY SAND, medium to coarse; light gray, wet, trace gravel, with shells, Calcareous 7 30 (Limestone gravel).  $-51.0 \pm 10.5$ 10.5': SILTY SAND (GM), medium to coarse; gray, some gravel, with shells, (Limestone gravel). 8 20 -52.5 12.0 12': SILTY SAND (SM), medium to coarse; gray, wet, some gravel, with shells, (Limestone gravel). 9 11 21 10 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-112-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-112-90 N 315322.3543 E 2385716.231 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 0 12 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 3/23/90 3/23/90 INCLINED 16. ELEVATION TOP OF BORING -35.7' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -35.7-0': SAND (SP), fine; tannish gray, Poorly Graded, USCS wet, trace silt, Slightly calcareous... Used Zeogel drilling mud. 1 50 1.5 -37.2 Set 6" casing by own weight to 37.1'. 1.5': SILTY SAND (SM), fine to medium; gray, wet, Weight of rods drove splitspoon from some shell fragments, Calcareous... 2 33 39.2' to 40.6', cont'd drive to 41.7'. Weight of rods drove splitspoon from -38.7  $\mp$ 3.0 3': CLAY (CH), high plasticity; fine; gray, high 41.7' to 43.3', cont'd drive to 43.7' w/ 4 plasticity, trace sand, and shell fragments. blows & to 44.7' w/ 4 blows. 7 3 NOTE: Suspect thin Limstone layers from 45.4' to 55.2'. LAB CLASSIFICATION 6': Some sand, and shell fragments. Sample No. 1 - SP-SM 4 4 -44.7 9.0 9': CLAYEY SAND (SC), medium to coarse; tannish 5 -45.4 9.7 gray, wet, some shell fragments, trace gravel, 6 20 Calcareous -46.2 10.5 (Limestone gravel). 9.7': SILTY GRAVEL (GM), fine to coarse; light 7 27 gray, wet, some sand, and shell fragments. Calcareous (Limestone gravel).. 8 24 10.5': SILTY SAND (SM), medium to coarse; light gray, wet, some gravel, and shell fragments, Calcareous (Limestone gravel). 9 16 13.5': SAND, fine to medium; trace gravel, and shell fragments, Calcareous (Limestone gravel). 30 10 15': SAND, medium to coarse; some gravel, and shell fragments, (Limestone gravel). 11 15 19 12 -55.2 = 19.5 BOTTOM OF BOREHOLE AT -55.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-112A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 315322.3543 E 2385716.231 EC-112A-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL VERTICAL 15. DATE BORING 3/24/90 3/24/90 INCLINED 16. ELEVATION TOP OF BORING -35.8' MLLW 6. THICKNESS OF OVERBURDEN 12.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 1.3' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.4' James Arthur, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.8\_ 0': SAND (SP), fine; tannish gray, Poorly Graded, USCS wet, trace silt, Slightly calcareous. Set 6" casing by own weight to 38.0'. 1 14 Made new batch of Zeogel mud at 44.8'. 2 44 3': Greenish gray. 3 21 -40.3 4.5 4.5': SAND (SM), fine to medium; gray, wet, with shell fragments, Calcareous. 4 3 -41.8 6.0 6': SAND (SP), fine to medium; gray, Poorly Graded, wet, with shell fragments, Calcareous. 5 20 7.5 -43.3 7.5': CLAYEY SAND (SC), medium to coarse; dark Pull #1 gray, wet, some gravel, and shell fragments, From 46.3' to 48.8' 6 Run 2.5' Rec 0.0' 3 Calcareous C.L. 2.5' Taped 47.2' (Limestone gravel). -44.8 9.0 Drilling Time: 4 min. 9': SILTY GRAVEL (GM), fine to coarse; light gray Hyd. Pressure: 150 PSI to white, wet, some sand, and shell fragments, Water Return: 0% 7 18 Calcareous (Limestone gravel).  $-46.3 \pm 10.5$ Pull #2 10.5': Core loss. From 48.8' to 49.4' Run 0.6' Rec 1.3' C.G. 0.7' Taped 49.4' Drilling Time: 4 min. Hyd. Pressure: 150 PSI -48.1 12.3 Water Return: 0% 12.3': CLAYEY SANDY, medium to coarse; light gray, Fossiliferous, poorly cemented, friable, soft Box badly broken. 49.1' - 49.4' fine to medium grained..  $-49.4 \pm 13.6$ BOTTOM OF BOREHOLE AT -49.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-113-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-113-90 N 314641.1837 E 2384898.359 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/23/90 3/23/90 16. ELEVATION TOP OF BORING -43.3' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.3\_ 0': CLAY (CH), high plasticity; gray, wet, high USCS plasticity, trace sand. Used Zeogel drilling mud. Set 6" casing by own weight to 48.3'. 0 1 Weight of rods drove splitspoon from 43.3 to 46.3, 49.3 to 51.8, & 52.3 to 54.8'. 2 2 4.5': Trace shell fragments. 3 6 6': Some sand, and shell fragments. 0 4 7.5': No sand or shell fragments.. 5 2 6 0 2 7 -55.3 BOTTOM OF BOREHOLE AT -55.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-114-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-114-90 N 316169.0227 E 2384160.023 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/24/90 3/24/90 INCLINED 16. ELEVATION TOP OF BORING -40' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -40 0': CLAYEY SAND (SC), fine to medium; gray, wet, USCS 0 trace shell fragments. 1 9 9 Zeogel drilling mud -41.5 1.5 1.5': SILTY SAND (SM), fine to medium; gray, wet, Set 6" csing by own weight to 46.5'. Weight of rods drove splitspoon from 40.0' to 40.5'. One hammer blow drove trace shell fragments, Slightly calcareous. 2 0 splitspoon from 41.5' to 43.0'. Weight of -43.0 3.0 rods drove splitspoon from 44.5' to **3':** CLAY (CH), high plasticity; gray, moist, high plasticity, trace sand, and shell fragments. 46.6', cont'd to 47.5' w/ 4 blows. Weight of rods drove splitspoon from 50.5' to 3 11 4.5': Trace sand, and shell fragments. 4 0 6': No shell fragments.. 5 4 7.5 -47.5 7.5': CLAYEY SAND (SC), fine; gray, wet, with shell fragments. 6 0 7 3 10.5': SAND, medium to coarse. 0 8 <u>-55.0</u>  $\pm$  15.0 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-115-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-115-90 N 315605.8096 E 2383141.13 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Army Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL 15. DATE BORING 3/24/90 3/24/90 INCLINED 16. ELEVATION TOP OF BORING -39.6' MLLW 6. THICKNESS OF OVERBURDEN 15 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 James A. Biddle, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV DEPTH Samp REMARKS RQD % REC (Description) -39.6\_ 0': CLAYEY SAND (SC), medium to coarse; gray, USCS wet, with shell fragments, Slightly calcareous... 1 0 Used Zeogel drilling mud. St 6" casing by own weight to 40.7'. Weight of rods drove splitspoon from 2 3 39.6' to 41.1', cont'd drive to 41.6' w/ 2 blows, to 42.6' w/ 1 blow. Weight of rods drove splitspoon from 42.6' to 3': SAND, fine to medium; some shell fragments. 44.6', cont'd drive to 45.6' w/ 3 blows. Weight of rods drove 45.6' to 47.2', 3 0 cont'd to 47.6' w/ 2 blows. Weight of rods drove splitspoon from 48.6' to 4.5 49.6', cont'd to 50.1' w/ 12 blows. 4.5': CLAY (CH), high plasticity; gray, moist, high plasticity, trace sand, and shell fragments. NOTE: Suspect thin limestone layers 4 3 from 49.6' to 54.6'. LAB CLASSIFICATION Sample No. 2 - SM-SC 0 5 6 6 <u>-4</u>8.6 9.0 9': CLAYEY SAND (SC), fine; gray, moist, trace 7 0 -49.6 10.0 10': SILTY GRAVEL (GM), fine to coarse; light gray, 8 12  $-50.1 \pm 10.5$ wet, some sand, and shell fragments, Calcareous (Limestone gravel). 10.5': SILTY SAND (SM), medium to coarse; light 9 22 gray, wet, some gravel, trace shell fragments, Calcareous (Limestone gravel). 10 22 23 11 -54.6<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -54.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-116-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 316890.5452 E 2381907.843 EC-116-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/26/90 3/26/90 INCLINED 16. ELEVATION TOP OF BORING -45.3' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) **0':** CLAY (CH), high plasticity; gray, wet, high plasticity, trace sand, Slightly calcareous.. -45.3\_ USCS 1 0 Used Zeogel drilling mud. 2 10 3 0 4 5 5 0 7.5 -52.8 7.5': CLAYEY SAND (SC), medium to coarse; gray, wet, trace shell fragments, Slightly calcareous... 6 5 7 28 -55.5 10.2 -55.8 10.5 8 10.2': SAND (SP), coarse; light gray, wet, trace 0 gravel, Quartà. BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -55.8 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-117-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-117-90 N 317335.5757 E 2382061.751 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/25/90 3/25/90 16. ELEVATION TOP OF BORING -38.7' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.2 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.7\_ 0': CLAY (CH), high plasticity; gray, moist, high USCS plasticity, some sand, and shell fragments. 1 7 Used Zeogel drilling mud. 1.5': Trace sand, and shell fragments. 2 11 3 0 4 3 0 5 6 4 7 0 10.5': Trace gravel. 7 8 -50.7 <sup>-</sup> 12.0 12': SILTY SAND (SM), medium to coarse; gray to NOTE: Suspect thin limestone layers light gray, wet, some gravel, trace shell fragments, between 50.7' and 55.2'. 9 34 Limestone gravel.. 13.5': Light gray. 10 38 15': Trace gravel, Limestone gravel.. 11 39 <u>-55.2 ∓ 16.5</u> BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.2 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-118-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-118-90 N 316734.3815 E 2381124.866 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/24/90 3/24/90 16. ELEVATION TOP OF BORING -40.8' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': CLAYEY SAND (SC), fine; gray, wet, trace shell USCS fragments, Slightly calcareous... Used Zeogel drilling mud. 0 1 2 5 -49.8 + 9.0 9': SILTY SAND (SM), medium to coarse; light gray, wet, trace gravel, and shell fragments, Calcareous 3 36 (Limestone gravel).. 10.5': Some gravel, (Limestone). 4 24 12': Trace gravel, (Limestone). 30 5 24 6 -55.8  $\pm$  15.0 BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-119-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-119-90 N 317594.0566 E 2379589.667 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/25/90 3/25/90 INCLINED 16. ELEVATION TOP OF BORING -43.6' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -43.6\_ 0': CLAYEY SAND (SC), fine; gray, wet, trace shell USCS fragments. 1 0 Used Zeogel drilling mud. NOTE: Suspect thin limestone layers 2 1 from 48.7' to 55.6'. 3 7 -48.1 4.5 **4.5':** CLAY (CH), high plasticity; gray, moist, high plasticity, some sand, and shell fragments. 4 -48.7 5.1 5.1': SILTY GRAVEL (GM), fine to coarse; light gray 5 25 to gray, wet, some sand, and shell fragments, -49.6 6.0 Calcareous Limestone. 6': SILTY SAND (SM), medium to coarse; light gray, 6 26 wet, some gravel, and shell fragments, Calcareous 7.5': SAND, trace gravel, Limestone. 7 36 8 40 10.5': Some gravel, Limestone. 9 27 -55.6 <del>+</del> 12.0 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-120-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 318742.0272 E 2379475.425 EC-120-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 11 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/25/90 3/25/90 16. ELEVATION TOP OF BORING -38' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38 0': CLAY (CH), high plasticity; gray, moist, high USCS plasticity, some sand, trace shell fragments. 1 1 Used Zeogel drilling mud. 2 3 3 6 4.5': Trace sand. 0 4 5 4 0 6 7 8 8 0 9 6 10 0 7 11 -54.5 16.5 BOTTOM OF BOREHOLE AT -54.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-121-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-121-90 N 318489.9163 E 2378937.472 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/26/90 3/26/90 16. ELEVATION TOP OF BORING -46.1' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-46.1_ - - - -	_		<b>0':</b> CLAY (CH), high plasticity; gray, moist, high plasticity, trace sand.		1		USCS Used Zeogel drilling mud		0
	- - - - - -				2				5
-	- - - - -				3				0
-					4				6
	- - - - -				5				0
-55.1					6				0

BOTTOM OF BOREHOLE AT -55.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-122-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-122-90 N 318208.815 E 2378444.525 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/2/90 4/2/90 INCLINED 16. ELEVATION TOP OF BORING -39.2' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.2\_ 0': SILTY SAND (SM), fine; gray, wet, trace shell USCS fragments, Slightly calcareous... Used Zeogel drilling mud. 1 5 LAB CLASSIFICATION Sample No. 1 - SC 3': With shell fragments, Calcareous... 2 12 7 3 -45.2 6.0 6': CLAYEY SAND (SC), fine to medium; gray, some gravel, and shell fragments, Calcareous. 2 4 Limestone. -46.7 ‡ 7.5 7.5': SILTY SAND (SM), fine to medium; light gray, wet, trace gravel, Calcareous, 5 36 Limestone. 9': Trace gravel, Fine limestone gravel. 6 40 7 47 12': Trace gravel, Fine to coarse limestone gravel. 8 39 9 34 15': Trace gravel, Fine limestone gravel.. 10 45 <u>-55.7 ∓ 16.5</u> BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.7 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-123-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-123-90 N 319689.6622 E 2377747.208 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 4/3/60 4/3/90 16. ELEVATION TOP OF BORING -33.9' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) 0': SILTY SAND (SM), fine; gray, wet, trace shale -33.9 USCS fragments, slightly calcareous. 1 8 Used Zeogel drilling mud. 2 12 -36.9  $\mp$ 3.0 3': CLAYEY SAND (SC), fine to medium; light gray to gray, wet, some shell fragments, calcareous. 3 0 LAB CLASSIFICATION 4.5': Fine; gray, wet, trace shale fragments, slightly Class. LL PL calcareous. No. 3 4 SC 49 15 5 3 7 6 -42.9<del>+</del> 9.0 **9':** CLAY (CH), high plasticity; gray, moist, high plasticity, trace shell fragments. 7 0 8 2 9 1 10 5 11 6 12 3 -54.9 ‡ 21.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-124-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL EC-124-90 N 319059.4788 E 2376847.33 Failing 1500 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 0 12 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED VERTICAL 15. DATE BORING 4/3/90 4/3/90 INCLINED 16. ELEVATION TOP OF BORING -36.7' MLLW 6. THICKNESS OF OVERBURDEN 18 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 Bob Green, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp **REMARKS** RQD % REC (Description) -36.7-0': SILTY SAND (SM), fine; gray, wet, trace shell USCS fragments, and clay, Slightly Calcareous. 1 2 Used Zeogel drilling mud. 2 6 NOTE: Suspect thin layers from 47.2' to -39.7干 3.0 54.7'. 3': CLAYEY SAND (SC), fine; gray, wet, some shell fragments, Slightly Calcareous. 3 3 -41.2 4.5 4.5': CLAY (CH), high plasticity; gray, moist, high plasticity, trace shell fragments, and sand. 5 4 6': Some sand, and shell fragments. 5 0 7.5': Some sand, and shell fragments. 6 9 -45.7 9.0 9': CLAYEY SAND (SC), fine to medium; gray, wet, trace shell fragments. 7  $-47.2 \pm 10.5$ 10.5': SILTY SAND (SM), medium to coarse; light gray, wet, some gravel, Limestone gravel 8 13 Calcareous. 9 31 13.5': Trace gravel, Limestone. 10 41 15': Some gravel, Fine to coarse limestone gravel.. 49 11 16.5': Trace gravel, Fine to coarse limestone gravel.. 12 37 -54.7<sup>‡</sup> 18.0 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-125-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-125-90 N 319639.4736 E 2376837.209 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/4/90 5/4/90 16. ELEVATION TOP OF BORING -46.4' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 Toni Nicholson, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': CLAY (CH), high plasticity; dark gray, saturated, USCS 1 0.5 high plasticity, some shell fragments, and sand. 0.5': SILTY SAND (SM), fine, soft; light gray, wet, 2 with gravel, and shell fragments, Limestone chunks... Mixed Zeogel drilling mud. 3 21 4 33 37 5 37 6 7 36 -55.4 9.0 BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-126-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-126-90 N 320638.2929 E 2375992.993 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/4/90 4/4/90 INCLINED 16. ELEVATION TOP OF BORING -33.7' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -33.7-0': CLAYEY SAND (SC), fine; gray, wet, Slightly USCS calcareous.. 1 5 2 13 3': Shell fragments. 3 2 4 4.5': Some shell fragments. 2 4 <u>-39.7</u>‡ 6.0 **6':** CLAY (CH), high plasticity; gray, moist, high plasticity, trace silt, and sand, Slightly calcareous.. 5 0 6 6 7 2 8 4 LAB CLASSIFICATION 12': No shells or sand .. Sample No. 2 - SM 4 9 Specific Gravity - 2.69 5 -48.7‡ 15.0 15': CLAYEY SAND (SC), fine to medium; grayish green, moist, trace shell fragments, and wood, 10 3 Slightly calcareous.. 11 12 -51.7 = 18.0 18': CLAY (CH), high plasticity; gray, high plasticity, trace silt. 12 16 -54.7 = 21.0 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-127-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-127-90 N 320029.1115 E 2375097.11 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/4/90 4/4/90 16. ELEVATION TOP OF BORING -38.9' MLLW 6. THICKNESS OF OVERBURDEN 15.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.4' James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -38.9\_ 0': CLAYEY SAND (SC), fine; dark gray, wet, trace USCS shell fragments, Calcareous.. Used Zeogel drilling mud. 0 1 -41.9 3.0 3': SILTY SAND (SM), medium to coarse; light gray, wet, some gravel, trace shell fragments, Calcareous 2 17 Limestone gravel.. 4.5': See note in remarks... NOTE: Inadvertantly washed hole from 43.4' to 45.4'. Wash return same material as from 41.9' to 43.4', but hard material to fishtail. 3 43 6.5': Trace gravel, Limestone gravel. No shell fragments.. 44 4 5 46 9': Trace gravel, Trace of fine limestone gravel.. 6 29 10.5': Trace gravel, Fine to coarse limestone gravel.. 7 43 8 28 9 35 -54.4 15.5 BOTTOM OF BOREHOLE AT -54.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-128-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-128-90 N 320607.1 E 2375047.99 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/22/90 5/22/90 16. ELEVATION TOP OF BORING -44.2' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -44.2\_ 0': SANDY SAND (SM), medium to coarse; light USCS gray, wet, trace shale fragments, and limestone 1 24 fragments, calcareous. 1.5': SAND, fine to medium; trace limestone Mixed new batch of Zeogel mud at fragments. 45.7', 2 40 3': SAND, medium to coarse; gray. 3 30

4 23 6': Trace limestone fragments. 5 24 6 27 7 25 -54.7  $\mp$  10.5 BOTTOM OF BOREHOLE AT -54.7 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-129-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-129-90 N 320502.8388 E 2373786.996 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/5/90 4/5/90 INCLINED 16. ELEVATION TOP OF BORING -33.5' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 53' James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -35.5 0': SANDY ELASTIC SILT CLAYEY SAND (SC). USCS fine; dark gray, wet, trace shell fragments, and Used Zeogel drilling mud. 1 0 -36.5‡ 3.0 3': SILTY SAND (SM), medium to coarse; light gray, wet, trace gravel, Calcareous 2 15 Limestone gravel.. 3 14 4 15 20 5 6 19 LAB CLASSIFICATION Sample No. 2 - SM 7 23 Specific Gravity - 2.76 8 22 9 28 15': Trace gravel, Limestone gravel.. 10 24 11 18 18': SAND, medium; gray. 13 12 <u>-53.0</u>  $\pm$  19.5 BOTTOM OF BOREHOLE AT -53.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-130-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-130-90 N 321624.9289 E 2374259.771 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 16 0 16 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/5/90 4/5/90 INCLINED 16. ELEVATION TOP OF BORING -30.8' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 James Arthur, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.8 0': SILTY SAND (SM), fine; gray, wet. USCS 1 17 Used Zeogel drilling mud. 2 30 3': SAND, medium to coarse; with shell fragments, 3 5 Slightly calcareous. -35.3 4.5 4.5': CLAYEY SAND (SC), fine to medium; gray, moist, some shell fragments, Slightly calcareous. 4 28 LAB CLASSIFICATION 6': Trace shell fragments. 2 5 Sample No. 2 - SM Specific Gravity - 2.70 6 10 Sample 4 - SC Specific Gravity - 2.69 9': SAND, medium to coarse; grayish green, 7 6 Non-calcareous. -41.3 = 10.5 10.5': SILTY SAND (SM), medium to coarse; light gray, wet, trace gravel, Calcareous 8 16 Limestone. 9 8 -44.3 = 13.5 13.5': SILTY GRAVEL (GM), fine to coarse; light 10 23 gray, wet, trace sand, Limestone.  $-45.8 \pm 15.0$ 15': SILTY SAND (SM), fine to medium; light gray, wet, trace gravel, Calcareous 11 12 Limestone. 12 17 13 22 14 23 15 23 16 21  $-54.8 \pm 24.0$ BOTTOM OF BOREHOLE AT -54.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-131-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-131-90 N 321648.703 E 2373161.756 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/8/90 5/8/90 INCLINED 16. ELEVATION TOP OF BORING 45.5' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING -36.5 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.5 0': CLAY (CH), high plasticity; dark greenish gray, USCS saturated, high plasticity. 1 0 Mixed Zeogel drilling mud. 43.5 -2.0 2': SAND (SP), fine to medium; gray, Poorly Graded, some shell fragments. 2 12 42.0 3.5 3.5': SILTY SAND (SM), fine; gray, some shell 3 37 fragments. 4 18 39.5 6.0 6': CLAYEY SILTY SAND (SC), fine; light greenish tan, trace shell fragments, and rock fragments, 5 12 calcareous. 6 10 36.5 + 9.0 BOTTOM OF BOREHOLE AT 36.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-132-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-132-90 N 321487.5659 E 2372487.783 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 0 15 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 5/1/90 5/1/90 INCLINED 16. ELEVATION TOP OF BORING -33.3' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -33.3 0': CLAY (CH), high plasticity; very dark gray, high USCS plasticity, soupy. Mixed Zeogel drilling mud. 1 0 -36.3 干 3.0 3': SILT (MH), high plasticity; very dark gray, high 2 0 plasticity, with shell fragments, soupy. -37.3 4.0 7 4': SILTY SAND (SM), fine to medium; very light 3 gray, moist, with limestone fragments, calcareous. 4.5': Fine; gray, slightly clayey, calcareous. 45 4 LAB CLASSIFICATION Sample No. 5 - SM 5 40 Specific Gravity - 2.72 6 31 7 34 8 28 9 31 10 20 28 11 16.5': Greenish gray, with limestone fragments. 12 25 <u>-51.3‡ 18.0</u> 18': SILT (ML), low plasticity; olive green, low plasticity, trace shell fragments, calcareous, with thin 13 15 limestone lenses. 19.5': Dark olive green, trace shell fragments, slightly calcareous. 9 14 15 10 -55.8  $\pm$  22.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.8 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-132A-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-132A-90 N 321499.5636 E 2372476.78 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/22/90 5/22/90 INCLINED 16. ELEVATION TOP OF BORING -35.4' MLLW 6. THICKNESS OF OVERBURDEN 5.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 10' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp **REMARKS** RQD % REC (Description) -35.1 0': CLAYEY SILT (MH), dark gray to black, wet, USCS trace sand, Slightly calcareous. 1 0 -38.4干 3.0 3': SILTY SAND (SM), medium to coarse; light gray, Pull #1 2 37 From 39.6' to 44.3' wet, trace gravel, and shell fragments, Calcareous Run 4.7' Rec 0.9' C.L. 3.8' Taped 42.8' Limestone. Drilling Time: 9 Min <u>-40.6</u> 5.2 Hyd. Pressure: 100 PSI -40.8 5.4 5.2': Limestone Water Return: Lost all water at approx. 5.4': No Recovery. 41.1'. Box 17 Pull #2 From 44.3' to 46.3' -44.6<sup>-</sup> 9.2 Run 2.0' Rec. 0.0' C.L. 2.0' Taped 45.1' 9.2': No Recovery. Drilling Time: 1 Min Box 0 Hyd. Pressure: 250 PSI Water Return: 100% -46.5 11.1 Pull #3 11.1': No Recovery. From 46.3' to 48.8' Run 2.5' Rec. 0.0' C.L. 2.5' Taped 47.4' Box 0 Drilling Time: 28 Min Hyd. Pressure: 75 PSI -49.1 ± 13.7 Water Return: 100% 13.7': SAND (SM), medium to coarse; gray, wet, trace gravel. Calcareous 3 28 Soft, friable limestone gravel.  $-50.6 \pm 15.2$ BOTTOM OF BOREHOLE AT -50.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-133-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-133-90 N 322579.5628 E 2372509.558 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 0 18 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/2/90 5/2/90 INCLINED 16. ELEVATION TOP OF BORING -27.7' MLLW 6. THICKNESS OF OVERBURDEN 27' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -27.7 0': SILTY SAND, fine; greenish gray, trace shell USCS 1 19 fragments, glauconitic, calcareous. 2 30 LAB CLASSIFICATION Sample No. 2 - SP-SM Sample No 9 - SM 3 11 4.5': Gray. 4 5 -33.7 6.0 6': CLAYEY SAND (SC), fine; dark gray, with shell 5 5 fragments, calcareous. 6 5  $-36.7 \pm 9.0$ 9': SILTY SAND (SM), fine; gray, some shell 7 10 fragments, calcareous. 10.5': Light gray, trace shell fragments. 8 19 12': Gray. 9 36 10 24 15': Light tannish gray, some shell fragments. 11 15 12 14 18': Fine; light greenish tan, with shell fragments, 13 6 and limestone fragments, very calcareous. 14 7 21': Fewer limestone fragments. 15 8  $-50.2 \pm 22.5$ 22.5': CLAYEY SAND (SC), fine; light greenish tan, 16 13 with limestone fragments, and shell fragments, very  $-51.7 \pm 24.0$ 24': SILT (ML), low plasticity; dark olive green, low 17 9 plasticity, trace shell fragments, calcareous. 18 12 <u>-54.7</u> ± 27.0 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-134-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-134-90 N 322385.1892 E 2370674.581 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 0 15 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/31/90 1/31/90 INCLINED 16. ELEVATION TOP OF BORING -32.8' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.8 0': CLAYEY SILT (MH), dark gray, wet, some sand. USCS 1 0 -34.9 2.1 2.1': SILTY GRAVEL (GM), fine to coarse; light 2 26 -35.8 \mp 3.0 gray, wet, some sand, and shell fragments, calcareous, limestone gravel. NOTE: Suspect occasional thin limestone layers from 34.9' to 46.3'. 3': SILTY SAND (SM), fine to medium; gray, wet, 3 44 calcareous. 4.5': SAND, medium to coarse; wet, trace limestone fragments, and shell fragments. 35 4 6': SAND, fine to medium. 5 31 6 31 7 43 8 31 9 35  $-46.3 \pm 13.5$ 13.5': CLAYEY SAND (SC), fine to medium; light gray, wet, some shell fragments, calcareous. 10 17 15': Large amount of shell fragments. 7 11 -49.3 = 16.5 16.5': CLAY (CH), high plasticity; dark greenish brown, moist, high plasticity. 12 25 13 16 16 14 15 15 <u>-55.3</u>  $\pm$ BOTTOM OF BOREHOLE AT -55.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-134A-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 322392.1873 E 2370665.58 EC-134A-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 5/19/90 5/19/90 INCLINED 16. ELEVATION TOP OF BORING -33.5' MLLW 3' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 13.8 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS LEGEN **DEPTH** Samp **ELEV** REMARKS RQD % REC (Description) -33.5 0': CLAYEY SILT (MH), dark gray, wet, some sand, USCS and shell fragments, slightly calcareous, trace coarse 1 6 limestone gravel. -35.0 1.5 1.5': SILTY SAND (SM), medium to coarse; light gray and gray, wet, trace limestone fragments, and 2 62 shell fragments, calcareous. -36.5 3.0 3': Limestone Pull #1 From 36.5' to 40.7' Run 4.2' Rec 3.2' C.L. 1.0' Taped 40.2' Drilling Time: 7 Min. Hyd. Pressure: 0 PSI Box Water Return: 100% 76 -40.8 7.3 7.3': SILTY SAND (SM), medium to coarse; gray, Pull #2 From 40.7' to 47.3' moist, trace limestone fragments. Run 6.6' Rec 2.5' C.L. 4.1' Taped 46.7' Drilling Time: 15 Min. Hyd. Pressure: 125 PSI Water Return: 100% Box 38 -47.3 13.8 13.8': No recovery Pull #3 From 47.3' to 50.0' Box Run 2.7' Rec 0.0' C.L. 2.7' Taped 48.6' 0 Drilling Time: 3 Min. -49.3 15.8 Hyd. Pressure: 100 PSI 15.8': CLAY (CH), high plasticity; dark greenish Water Return: 10 brown, moist, high plasticity, some sand, slightly <u>-50.3</u> + 16.8 calcareous, soft to stiff. BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-134A-90

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DDILLING LOC (Cont Cheet)	INSTALLATION		SHEET 2		
DRILLING LOG (Cont Sheet)	Charleston Harbor	OF 2 SHEETS			
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL		
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW		
LOCATION COORDINATES	ELEVATION TOP OF BORING				
N 322392.1873 E 2370665.58	-33.5'				
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Samp No.	REMARKS	Blows/ 0.5 ft N-Value		

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**Boring Designation** EC-135-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-135-90 N 323238.0977 E 2370256.403 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/12/90 5/12/90 16. ELEVATION TOP OF BORING -42.8' MLLW 6. THICKNESS OF OVERBURDEN 12.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.8\_ 0': CLAY (CH), high plasticity; dark olive green, high USCS plasticity, soupy. NOTE: Sample #1 taken off of the rods. 1 0 4.7': Dark gray, wet. 2 0 -48.4 5.6 5.6': SILT (ML), low plasticity; dark olive green, 3 0 moist, low plasticity, calcareous. 19 4 5 13 6 12 7 11 -54.9<del> —</del> 12.1 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-136-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-136-90 N 325237.3398 E 2366595.967 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/12/90 5/12/90 16. ELEVATION TOP OF BORING -44.9' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -44.9\_ USCS 0': SILT (ML), low plasticity; dark olive green, moist, low plasticity, calcareous. 1 9 2 12 3 10 4.5': With sand, phosphate grains. 4 8 5 9 6 6

BOTTOM OF BOREHOLE AT -55.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-55.4  $\pm$  10.5

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DRILLING LOG | DIVISION | INSTALLATION | Charleston Harbor | Sheet | 1 OF | 1 SHE

DRULLING LOC		INSTALLATION SH							Т	1				
DRILLING LOG South Atlantic Division				Division		Char	lesto	on H	OF	1 sh	IEETS			
1. PROJECT						9. COORDINATE SYSTEM VER								
Charlest	on H	lark	or Entr	ance Channel De	epening	State Plane - South Carolina NAD83 MLLW								
						10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
2. HOLE NUMBER : LOCATION COORDINATES								-	_	R'S DESIGNA	ATION OF DRILL			
EC-137-			N	I 326986.7774 E	2363875.594	Failing 314								
3. DRILLING AGENCY						12. TOTAL SAMPLES DISTURBED UNDISTURBED								D
			ngineer	s - Savannah Dis	trict				5		5	<u>:</u>	0	
4. NAME OF D		ER				13.	TOT	AL NU	IMBE	R CORE BOXE	s 0			
5. DIRECTION		200	DINIC	: DEG FROM	BEARING	14.	ELE\	/ATIC	N GR	OUND WATE	R NA			
VERTIC		JUR	KING	: VERTICAL	BEARING	45	D.A.T.			STA	RTED	COMPLETE		
☐ INCLIN	ED				-	15.	DATE	BOF	KING	:	5/12/90	5/1	2/90	
6. THICKNES	S OF	OVE	ERBURDE	N 7.5'	•	16. ELEVATION TOP OF BORING -47.4' MLLW								
7. DEPTH DR	ILLED	NI C	TO ROCK	0'		17. TOTAL CORE RECOVERY FOR BORING N/A								
						18. SIGNATURE AND TITLE OF INSPECTOR								
8. TOTAL DEPTH OF BORING 54.9'				Toni Nicholson, P.G.										
ELEV DEP			1	FIELD CLASSIFICATIO	N OF MATERIALS		%	No O			DEMARKS		ws/	alue
ELEV DEP	IH   }	LEGEND		(Descrip	tion)		REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-47.4			<b>0':</b> No re	covery.				- 0,						
1 ‡				•										
1 ‡														
-48.9 ‡ 1.5	5													
#	•	•		ND (SP), fine to med										
1 =		•	Graded,	wet, with shell fragm	nents.			1						3
-49.9 2.5	)		2 5'- 911	T (ML), low plasticity	· dark aliva groop			_						40
1 +				w plasticity, some sa				2						12
1 ‡			,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,									
1 ‡								3						7
1 ‡														
1 ±														
1 ±														
1 ±								4						7
1 ±														
1 ±														
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BOTTOM OF BOREHOLE AT -54.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-138-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 321643.6083 E 2372699.753 EC-138-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/13/90 6/13/90 INCLINED 16. ELEVATION TOP OF BORING -41.5' MLLW 6. THICKNESS OF OVERBURDEN 1.5' 17. TOTAL CORE RECOVERY FOR BORING 100%7. DEPTH DRILLED INTO ROCK 6.6 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.6 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.5 0': SILTY GRAVEL (GM), fine to coarse, medium USCS hard; light gray, wet, some sand, calcareous, Made new batch of Zeogel mud. 1 21 limestone gravel. Pull #1 From 43.0' to 47.5' -43.0 1.5 Run 4.5' Rec 4.5' Taped 47.0' 1.5': CLAYEY SANDY, gray, fossiliferous, porous, some small to large vugs, intensely to highly joionted. Drilling Time: 9 Min. Hyd. Pressure: 50 PSI Water Return: 70% (Driller suspects loss of water at casing seat) Waxed sample from 44.6' to 45.0' for lab test Pull #2 From 47.5' to 47.8' (Blocked) Box Run 0.3' Rec 0.3' Taped 47.7' Drilling Time: 4 Min. -47.1 ± 5.6 Hyd. Pressure: 100 PSI 5.6': SAND (SM), medium to coarse; gray, wet, Water Return: 100% trace shell fragments, and gravel, calcareous, friable, sandy limestone gravel. Pull #3 -48.4 6.9 From 47.8' to 49.6' (Blocked) 6.9': SANDY, grayish tan, fossiliferous, soft to mod. 7.3 -48.8 Run 1.0' Rec 1.0' hard, proous, some small to large vugs, badly C.L. 0.8' broken. Taped 49.4' -49.6 8.1 7.3': Drilling Time: 4 Min. BOTTOM OF BOREHOLE AT -49.6 ft Hyd. Pressure: 100 PSI Water Return: 100% NOTE: Soils visually field classified in accordance BLOWS PER FOOT: Number required with the Unified Soil Classification System to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-139-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-139-90 N 320600.9858 E 2372699.753 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/6/90 6/6/90 16. ELEVATION TOP OF BORING -41.2' MLLW 6. THICKNESS OF OVERBURDEN 5.8 17. TOTAL CORE RECOVERY FOR BORING 100% 7. DEPTH DRILLED INTO ROCK 2.8' 18. SIGNATURE AND TITLE OF INSPECTOR

James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	4.3		0': CLAYEY SILT (MH), soft; gray, wet, trace sand, calcareous.		1		USCS  Made new batch of Zeogel mud.		0
-47.0	5.8		<b>4.3':</b> SILTY SAND (SM), medium to coarse; light gray, trace limestone fragments.		2				36
-49.8			<b>5.8':</b> SANDY, medium hard; light tannish gray, porous & pitted w/ small to large vugs.	100	Box 1		Pull #1 From 47.0' to 49.8' Run 2.3' Rec 2.8' Taped 49.5' Drilling Time: 9 Min Hyd. Pressure: 50 PSI Water Return: 100%		
			BOTTOM OF BOREHOLE AT -49.8 ft				BLOWS PER FOOT: Number required		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

49.8'

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

8. TOTAL DEPTH OF BORING

**Boring Designation** EC-140-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 Charleston Harbor Entrance Channel Deepening MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-140-90 N 319928.1513 E 2375287.133 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 2 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 6/6/90 6/6/90 INCLINED 16. ELEVATION TOP OF BORING -35.9' MLLW 6. THICKNESS OF OVERBURDEN 4.7' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 10.1 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.7 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -35.9 0': CLAYEY SAND (MH), gray to dark gray, wet, USCS trace sand, Slightly calcareous.. 0 1 2.7 -38.6 2.7': CH CLAY (CH), high plasticity; greenish gray, 2 0 moist, high plasticity, Slightly calcareous... 3 0 -39.6 3.7 3.7': SANDY CLAYEY GRAVEL (GC), fine to 4 7 coarse, soft; light gray, wet, some sand, with shell -40.6 4.7 fragments. Calcareous Pull #1 Limestone Gravel. From 40.6' to 41.3' (Blocked) Run 0.7' Rec 0.7' 4.7': CLAYEY GRAVEL, medium to coarse, soft; Taped 40.3' light tannish gray, 41.3'-Fossiliferous, porous & Drilling Time: 5 Min. Hyd. Pressure: 50 PSI pitted, some small to large vugs, intensely to highly iointed 41.3'-41.6'-Very soft to hard, sandy, clayey, badly Water Return: 100% Pull #2 41.6'-45.3'-Mod hard to hard. Near horizontal open From 41.3' to 45.9'. Run 4.6' Rec 4.0 C.L. 0.6' Taped 45.6' joints at 41.6', 42.1', 42.7', 42.9', 43.5', 43.8', 44.7', 45.0' & 45.3'. C.L. from 45.3' to 45.9'. Some soft zones & badly Drilling Time: 6 Min. broken from 45.9' to 46.0', 46.6' to 46.7', 47.4' to 47.6', 48.0' to 48.1', 49.6' to 49.8', & 50.1' to 50.4'. Hyd. Pressure: 90 PSI Box Water Return: 100% 1 of Near horizontal open joints at 46.0', 46.6', 46.7', Waxed sample from 42.1' to 42.7' & 2 47.4', 47.6', 47.6', 48.0', 48.1', 48.6', 48.8', 49.6', 49\*.8', 50.1', & 50.4'... 43.3' to 44.7' for lab test Pull #3 From 45.9' to 50.7' (Blocked) Run 4.8' Rec 4.8' Taped 50.7' Box 2 of Drilling Time: 8 Min. 2 Hyd. Pressure: 90 PSI Water Return: 100% -50.7‡ 14.8 BOTTOM OF BOREHOLE AT -50.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-141-97

						boring Designation	EU-14	1 31	
DRILLING LOG DIVISION				ATIO	SHEE	Т	1		
DRILLING LOG	South Atlantic Division			lest	on H	OF	<b>1</b> sн	IEETS	
1. PROJECT		9. COORDINATE SYSTEM VERTICAL							
Charleston Harbor Entr	rance Channel Deepening	State Plane - South Carolina NAD83 MLLW							1
		10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail							I
	CATION COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL							
EC-141-97	N 291755.1339 E 2428819.34	F	Failir	ng 3	14	_			
3. DRILLING AGENCY		12.	TOT	AL SA	MPLE	•	UNDIST	ISTURBED	
U.S. Corps of Engineer	rs - Savannah District				2	2		0	
4. NAME OF DRILLER		13.	TOT	AL NU	JMBEF	R CORE BOXES 0			
C. Robbins 5. DIRECTION OF BORING	: DEG FROM : BEARING	14.	ELE\	/ATIC	N GR	OUND WATER NA			
VERTICAL INCLINED	VERTICAL	15. DATE BORING STARTED COMPLETED 5/31/97 5/31/97							
6. THICKNESS OF OVERBURDE	EN 3'	16. ELEVATION TOP OF BORING -47' MLLW							
7. DEPTH DRILLED INTO ROCK	17. TOTAL CORE RECOVERY FOR BORING N/A								
7. DEPTH DRILLED INTO ROCK	18. SIGNATURE AND TITLE OF INSPECTOR								
8. TOTAL DEPTH OF BORING	50'	James Arthur, Geologist							
ELEV DEPTH S	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	D (SP), fine to medium; light brownish gray	,				USCS		0	
some sh	nell fragments, Calcareous.			1				4	14
I				'				-	14
l ‡								10	
1 ‡								9	
Ŧ <b>::</b>				2				13	43
1 ‡ 📆				_				21	
-50.0 + 3.0	M OF BOREHOLE AT -50 0 ft					BLOWS PER FOOT: Number		21	

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-141A-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-141A-97 N 291729.8138 E 2428815.405 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/97 6/1/97 INCLINED 16. ELEVATION TOP OF BORING -46.3' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.3 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.3\_ USCS 0': SAND (SP), fine to medium; brownish gray, with shell fragments, Calcareous. 1 5 11 5 11 16 43 16 3': Gray, some shell fragments. 7 2 13 32 12 10 11 32 11 6': Light gray, trace shell fragments. 14 3 17 48 17 7.5': Some shell fragments. 17 17 42 8 9': Gray, shell fragments. 2 0 2 0 10.5': Some shell fragments. 6 4 10 23 7 <u>-58.3  $\pm$  1</u>2.0 BOTTOM OF BOREHOLE AT -58.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

	Boring Designation EC-142-97							
DRILLING LOG DIVISION	INSTALLATION SHEET 1							
South Atlantic Division	Charleston Harbor OF 1 SHEET							
1. PROJECT	9. COORDINATE SYSTEM VERTICAL							
Charleston Harbor Entrance Channel Deepening	State Plane - South Carolina NAD83 MLLW							
<u> </u>	10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail							
2. HOLE NUMBER LOCATION COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL							
EC-142-97 N 291216.7643 E 2428092.7	711 Failing 314							
3. DRILLING AGENCY	12. TOTAL SAMPLES : DISTURBED : UNDISTURBED							
U.S. Corps of Engineers - Savannah District	2 2 0							
4. NAME OF DRILLER	13. TOTAL NUMBER CORE BOXES 0							
C. Robbins 5. DIRECTION OF BORING DEG FROM BEARING	14. ELEVATION GROUND WATER NA							
S. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL	15. DATE BORING STARTED COMPLETED 5/31/97 5/31/97							
6. THICKNESS OF OVERBURDEN 3'	16. ELEVATION TOP OF BORING -50.8' MLLW							
	17. TOTAL CORE RECOVERY FOR BORING N/A							
7. DEPTH DRILLED INTO ROCK 0'	18. SIGNATURE AND TITLE OF INSPECTOR							
8. TOTAL DEPTH OF BORING 53.8'	James Arthur, Geologist							
ELEV DEPTH S FIELD CLASSIFICATION OF MATERI. (Description)	ALS REMARKS REMARKS REMARKS REMARKS							
-50.8 <b>0':</b> SAND (SP), fine to medium; light brown	nish gray, USCS 0							
some shell fragments, Calcareous.	1 2							
ļ ‡ <b>!!!</b>								
ļ ‡ <u></u>	12							
1.5': Gray, trace shell fragments.	25							
<del> </del>	2 34 9							
<b>1</b>								
-53.8 + 3.0 -53.8	DI OWO PER FOOT Number of standard							

BOTTOM OF BOREHOLE AT -53.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-143-97 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-143-97 N 292892.3509 E 2426729.062 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/97 6/1/97 16. ELEVATION TOP OF BORING -46.6' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.6\_ USCS 0': SAND (SP), fine to medium; light brownish gray 4 and gray, some shell fragments, Calcareous. 1 8 37 25 27 2 120 64 29 10 13 40 17 5 10 28 13 20 29 71 22 7.5': Trace silt, and shell fragments. 1 3 1 4 2 -55.6+ 9.0 BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-144-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-144-97 N 292767.6577 E 2425719.77 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/12/97 6/12/97 -45.7' MLLW 16. ELEVATION TOP OF BORING 17' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 62.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.7-0': SAND (SP), fine to medium; grayish brown, USCS 2 some shell fragments, Calcareous. 5 17 10 1.2': Fine; gray, trace silt. 6 21 66 39 11 43 15 17 27 2 40 107 40 12 15 37 10 <u>-53.2</u> ‡ 7.5 7.5': (CH), dark gray. 0 3 0 0 0 -62.7 17.0 BOTTOM OF BOREHOLE AT -62.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-145-97 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-145-97 N 293237.4474 E 2424420.29 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 6/18/97 6/18/97 16. ELEVATION TOP OF BORING -44.5' MLLW 6. THICKNESS OF OVERBURDEN 9.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.2 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -44.5\_ USCS 0': (CH), high plasticity; gray, high plasticity, trace 0 shell fragments. 0 0 0 1 0 0 0 2 0 -54.2 BOTTOM OF BOREHOLE AT -54.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-146-97 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-146-97 N 300968.7041 E 2412009.23 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/18/97 6/18/97 INCLINED 16. ELEVATION TOP OF BORING -44.1' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.6 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -44.1\_ USCS 0': SAND (SP), fine to medium; gray, Poorly 0 Graded, some, shell fragments, Calcareous. 1 0 7 7 1.5': SAND, fine; trace, shell fragments, 19 Calcareous. 74 19 36 4 2 15 38 19 -48.6 4.5 4.5': SILTY SAND (SM), fine to medium; gray, 6 some, shell fragments. 3 11 30 13 11 13 43 19 9 19 50 22 9': Trace, shell fragments. 15 4 18 51 18 -54.6  $\mp$  10.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.6 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-147-97 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 5 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-147-97 N 300617.4359 E 2410871.394 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/4/97 6/4/97 16. ELEVATION TOP OF BORING -46.2' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.2\_ USCS 0': SAND (SP), fine to medium; gray, some shell 2 fragments, Calcareous. 1 12 61 41 -47.7 1.5 1.5': SILTY SAND (SM), fine to medium; light gray, 27 trace shell fragments, Calcareous. 2 27 92 38 23 26 75 26 3 12 36 14 7.5': Fine to medium; gray, shell fragments. 9 4 14 45 22 -56.7  $\mp$  10.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -56.7 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

DDILLING LOG (Cont Choot)	INSTALLATION	SHEET 2					
DRILLING LOG (Cont Sheet)	Charleston Harbor		OF 5 SHEETS				
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL				
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW				
LOCATION COORDINATES	ELEVATION TOP OF BORING						
N 300617.4359 E 2410871.394	-46.2'						
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Samp No. %%%	REMARKS	Blows/ 0.5 ft N-Value				

DDU LING LOG (Cont Choot)	INSTALLATION	SHEET 3			
DRILLING LOG (Cont Sheet)	Charleston Harbor		of 5 SHEETS		
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL		
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW		
LOCATION COORDINATES	ELEVATION TOP OF BORING	•			
N 300617.4359 E 2410871.394	-46.2'				
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Samp N. %	REMARKS	Blows/ 0.5 ft N-Value		

22 23

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DDILLING LOG (Comt Choot)	INSTALLATION SHEET									
DRILLING LOG (Cont Sheet)	Charleston Harbor		OF 5 SHEETS							
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL							
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW							
LOCATION COORDINATES	ELEVATION TOP OF BORING									
N 300617.4359 E 2410871.394	-46.2'									
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	REC & G %	REMARKS	Blows/ 0.5 ft N-Value							

12 14 20

46

			<u> </u>		
DDILLING LOG (Comt Choot)	INSTALLATION	SHEET 5			
DRILLING LOG (Cont Sheet)	Charleston Harbor		OF 5 SHEETS		
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL		
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW		
LOCATION COORDINATES	ELEVATION TOP OF BORING	•			
N 300617.4359 E 2410871.394	-46.2'				
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Samp N % % % %	REMARKS	Blows/ 0.5 ft N-Value		

**Boring Designation** EC-148-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-148-97 N 302451.8696 E 2409151.325 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/4/97 6/4/97 16. ELEVATION TOP OF BORING -47.4' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -47.<del>7</del> USCS 0.3 0': SAND (SP), fine to medium; gray, some shell 1 fragments, Calcareous. 5 0.3': SILTY SAND (SM), fine to medium; light gray 2 45 to gray, with shell fragments, Calcareous. 20 1.5': Gray, trace shell fragments. 20 9 3 46 15 22 12 18 49 19 14 4 17 42 21 15 5 23 59 21 -54.9 7.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-149-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-149-97 N 301767.9984 E 2408785.61 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/3/97 6/3/97 INCLINED 16. ELEVATION TOP OF BORING -49' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.5 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -49 0': SAND (SP), fine to medium; light brownish gray, USCS 2 some shell fragments, Calcareous. 100 19 1 17 -50.2 1.2 1.2': SILTY SAND (SM), fine to medium; light gray, 100 2 49 some shell fragments, trace fine gravel, Calcareous. 46 14 3 14 41 13 11 14 40 15 4.5': Gray, trace shell fragments. 15 4 17 53 21 17 5 52 18 17 -56.5 7.5 BOTTOM OF BOREHOLE AT -56.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-150-97 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-150-97 N 303110.5787 E 2406293.106 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/2/97 6/2/97 16. ELEVATION TOP OF BORING -49.4' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.9 James Arthur, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-49.4 <sub>-</sub>	_	.	0': SILTY SAND (SM), fine; light gray and gray, trace fine gravel, Calcareous.				USCS	2	
=	-		trado into gravos, Galcarocae.		1			33	68
_		.						33	
-								18	
-		•						21	72
]								33	
-		֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	3': Gray, trace shell fragments.					20	
1 =					2			27	81
-								34	
1 =		.	<b>4.5':</b> Trace fine to coarse gravel.					18	
_	_	┆┼┆┼			3			16	47
1 =		·						13	
-	_							19	
=		• 🛊 🕴 .			4			18	70
-56.9 <u>-</u>	7.5							33	

BOTTOM OF BOREHOLE AT -56.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

									Boring Designation	EC-15	<u> </u>	3		
	RILLIN		00	DIVISION	IN	STALL	ATIO	N		SHEE	T	1		
יט ן	KILLIN	IG L	UG	South Atlantic Division		Char	lesto	on H	arbor	OF	1 SH	IEETS		
1. PRO	JECT					9. COORDINATE SYSTEM VERTICAL								
Cha	rleston	Harb	or Entr	ance Channel Deepening	;	State Plane - South Carolina NAD83 MLLW								
					10	10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
	NUMBE		•	CATION COORDINATES		11. MANUFACTURER'S DESIGNATION OF DRILL								
	EC-151-98 N 328775.81 E 2359588.1						ıg 3′							
	3. DRILLING AGENCY					. TOTA	AL SA			UNDIST	_	D		
	U.S. Corps of Engineers - Savannah District							2	2	<u>:</u>	0			
	4. NAME OF DRILLER					. TOT	AL NU	JMBEI	R CORE BOXES 0					
	C. Robbins					. ELE\	/ATIO	N GR	OUND WATER NA					
	5. DIRECTION OF BORING DEG FROM BEARING VERTICAL				ļ				STARTED :(	COMPLET	ED			
	☐ INCLINED				15	15. DATE BORING 8/8/98 8/8/98								
6. THIC	6. THICKNESS OF OVERBURDEN 4'			16	. ELE\	/ATIO	N TO	P OF BORING -50.9' MLLV	٧					
7 DEDI	· · · · · · · · · · · · · · · · · · ·			17	. TOTA	AL CC	RE R	ECOVERY FOR BORING N/A						
7. DEPT	n DRILLI	EDINI	O ROCK	0	18	. SIGN	ATUF	RE AN	ID TITLE OF INSPECTOR					
8. TOTA	L DEPTH	OF B	ORING	54.9'		James Arthur, P.G.								
	DEPTH			FIELD CLASSIFICATION OF MATERIALS		%	Samp No.	_	DEMARKS		vs/	N-Value		
ELEV	DEPIH	EGEND		(Description)		REC	amp	å%	REMARKS		Blows/ 0.5 ft	>		
-50.9_			0'- CLA	Y (CH), high plasticity; gray, high pla	asticity		0)		USCS					
1 :				and, and shell fragments, slightly cal										
_														
1 -	ŧ l						1					1		
1 :	-													
1 -	-													
-53.4	2.5													
-	F			AYEY SAND (SC), fine; olive gray, p	partially									
] =	<b>+</b> • • • • • • • • • • • • • • • • • • •	indurated, calcareous.				2					80			
] =	540 40 70													
-54.9 <sup>-</sup>	4.0	////												

BOTTOM OF BOREHOLE AT -54.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

						Boring Designa	ation EC-1	<u>52-98</u>	3				
DRILLING LO	G	DIVISION	_	LLATI		SHE	ĒΤ	1					
DRILLING LO	G	South Atlantic Division				Harbor			HEETS				
1. PROJECT			9. COORDINATE SYSTEM : VERTICAL										
Charleston Harbo	r Entr	ance Channel Deepening	State Plane - South Carolina NAD83 MLLW										
			10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail										
2. HOLE NUMBER		CATION COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL										
EC-152-98	<u> </u>	329026.29 E 2360015.82		iling (									
3. DRILLING AGENCY			12. TO	OTAL S	AMPL 4	•	• -	TURBE	D				
	U.S. Corps of Engineers - Savannah District					<b>:</b>	4	0					
4. NAME OF DRILLER		13. TO	OTAL N	IUMBE	R CORE BOXES 0								
C. Robbins 5. DIRECTION OF BORIN		: DEG FROM : BEARING	14. El	EVATI	ON G	ROUND WATER NA							
S. DIRECTION OF BORING DEG FROM BEARING  VERTICAL VERTICAL						STARTED	COMPLET	ED					
				ATE BO	RING	8/10/98	3 : 8/ <i>°</i>	10/98					
6. THICKNESS OF OVER	N 6.3'	16. El	EVAT	ON TO	OP OF BORING -56	' MLLW							
	17. TO	OTAL C	ORE	RECOVERY FOR BORING	N/A								
7. DEPTH DRILLED INTO	7. DEPTH DRILLED INTO ROCK 0'				18. SIGNATURE AND TITLE OF INSPECTOR								
8. TOTAL DEPTH OF BORING 62.3'				James Arthur, P.G.									
9				_	_			T % +	_e				
ELEV DEPTH		FIELD CLASSIFICATION OF MATERIALS	RI RI	Samp No.	R&D %	REMAR	KS	Blows/ 0.5 ft	N-Value				
		(Description)		Sar	, ,			<u>m</u> 0	ż				
-56	: CLAY	(CH), high plasticity; gray, high plasticity,				USCS							
	ome sa	nd, and shell fragments, calcareous.											
$\pm$				1		Change of material at	58 3' lar #2		0				
+				'		from 58.3' to 58.9'	30.3. σαι π <u>2</u>						
+													
-58.3 2.3													
		AYEY SAND (SC), fine; olive gray, trace gments, calcareous.		2					0				
	ieii iiaų	grients, calcareous.			1								
<b>† *////</b>													
<b>+ ////</b>				3					0				
T ///													
<b>†</b>													
<b>1</b>													
<b>† */*/</b>				4					0				
-62.3 ± 6.3													
В	OTTO	M OF BOREHOLE AT -62.3 ft				BLOWS PER FOOT: N	Number required						

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

					Boring Designation	EC-153	<del>-98</del>	3		
DRILLING LOG	DIVISION	INSTA	LLATI	NC		SHEET 1		1		
DRILLING LOG	South Atlantic Division	Ch	arles	ton H	Harbor	of 1	SH	EETS		
1. PROJECT		9. COORDINATE SYSTEM VERTI								
Charleston Harbor Ent	rance Channel Deepening	State Plane - South Carolina NAD83 ML								
		10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
	CATION COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL								
	N 328766.43 E 2359580.54	Fai	ling 3	314						
3. DRILLING AGENCY		12. TC	TAL S	AMPL	•	UNDISTU	RBED	)		
U.S. Corps of Enginee	rs - Savannah District			2	2		)			
4. NAME OF DRILLER		13. TC	TALN	IUMBE	R CORE BOXES 0					
C. Robbins		14 FI	FVATI	ON GE	ROUND WATER NA					
5. DIRECTION OF BORING VERTICAL	DEG FROM BEARING		_ ,,,,,,,	011 01		COMPLETED				
INCLINED	VERTICAL	15. DA	TE BO	RING	8/11/98	8/11/				
<del></del>		16 FI	Ε\/ΔTI	ON TO	DP OF BORING -49.3' MLL		50			
6. THICKNESS OF OVERBURD	EN 6.6'					. v v				
7. DEPTH DRILLED INTO ROCK				RECOVERY FOR BORING N/A						
8. TOTAL DEPTH OF BORING	a TOTAL DEDTIL OF DODING				ND TITLE OF INSPECTOR					
	55.9'		_		rthur, P.G.			-		
ELEV DEPTH 9	FIELD CLASSIFICATION OF MATERIALS	9/	Samp No.		DEMARKS	7	o.5 ft	N-Value		
ELEV   DEPTH   O	(Description)		c g	RØB %	REMARKS	6	9.0	> -		
1 1 - 1	Y SAND (SM), medium to coarse; light gray	,	0)	+	USCS					
+ some s	hell fragments, and limestone fragments.	,			0000					
<b>│</b>	5 ,									
<b>│</b>										
<b>I</b>										
<b>I</b>										
<b>I</b> ±										
<b>I</b> ∓			1					0		
<b>I</b>										
<b>I</b>										
<u> </u>										
<b>│</b>										
<b>│</b>										
-54.4 5.1										
	AY (CL), low plasticity; olive gray, low			$\dashv$			}			
	y, some silt, calcareous.									
1 ±	,,		2					33		
-55.9 + 6.6										
	M OF BOREHOLE AT -55.9 ft				BLOWS PER FOOT: Number	required				

BOTTOM OF BOREHOLE AT -55.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

						Boring Designation	EU-15	<u> </u>	)	
DRILLING LOG	DIVISION	INS	TALL	ATIO	N		SHEET	,	1	
DRILLING LOG	South Atlantic Division	С	harl	esto	n H	arbor	of 1	SH	EETS	
1. PROJECT		9. COORDINATE SYSTEM VERTICAL								
Charleston Harbor Ent	rance Channel Deepening	State Plane - South Carolina NAD83 MLLW								
		10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
	OCATION COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL								
	N 328222.58 E 2361833.16	F	ailin	g 31	14	_				
3. DRILLING AGENCY		12.	TOTA	L SA	MPLE	•	UNDISTU	RBED	)	
U.S. Corps of Enginee	rs - Savannah District				2	2		0		
4. NAME OF DRILLER	13.	TOTA	L NU	MBEF	R CORE BOXES 0					
C. Robbins	14. E	ELEV	ATIO	N GR	OUND WATER NA					
5. DIRECTION OF BORING VERTICAL INCLINED	15. DATE BORING STARTED COMPLETED 8/13/98 8/13/9									
6. THICKNESS OF OVERBURDEN 4.1'			ELEV	ATIO	N TOI	P OF BORING -52.7' MLLV	٧			
7. DEPTH DRILLED INTO ROCK ()'			ТОТА	L CC	RE R	ECOVERY FOR BORING N/A				
7. DEPTH DRILLED INTO ROCK	0	18. \$	SIGN	ATUF	RE AN	ID TITLE OF INSPECTOR				
8. TOTAL DEPTH OF BORING	56.8'		J	ame	s Ar	thur, P.G.				
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value	
	YEY SAND (SC), fine; olive gray, trace shell nts, moderately calcareous.	I		1		USCS			0	
-56.8 4.1	OM OF BODEHOLE AT 56 9 ft			2		PLOWS DED FOOT: Number re			11	

BOTTOM OF BOREHOLE AT -56.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

							Boring Designation E	<u>:C-156</u>	<u>-98</u>		
DRILLING LO	20	DIVISION	II	INSTALLATION SHE							
DKILLING L	JG	South Atlantic Division	on	Char	lesto	on H	arbor	of 1	SHI	EETS	
1. PROJECT			9.	9. COORDINATE SYSTEM VERTICAL							
Charleston Harb	or Entra	ance Channel Deepeni	ing	State Plane - South Carolina NAD83 MLLW							
		·	10	10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail							
2. HOLE NUMBER		ATION COORDINATES		I. MAN	UFAC	TURE	ER'S DESIGNATION OF DRILL				
EC-156-98	: N	328131.03 E 236188	39.62	Failir	ng 31	14					
3. DRILLING AGENCY	•		12	2. TOTA	AL SA	MPLE	S DISTURBED I	UNDISTU	RBED	)	
U.S. Corps of Engineers - Savannah District						3	3		)		
4. NAME OF DRILLER					AL NU	IMBEF	R CORE BOXES 0				
	C. Robbins					N GR	OUND WATER NA				
5. DIRECTION OF BORI	5. DIRECTION OF BORING DEG FROM BEARING VERTICAL							MPLETED			
INCLINED VERTICAL				5. DATE	BOF	RING	8/13/98	8/13/			
6. THICKNESS OF OVERBURDEN 4.5'				16. ELEVATION TOP OF BORING -56.7' MLLW							
			1-	7 TOT	71 CC	RF R	ECOVERY FOR BORING N/A				
7. DEPTH DRILLED INT	7. DEPTH DRILLED INTO ROCK 0'						ID TITLE OF INSPECTOR				
8. TOTAL DEPTH OF BO	ORING	61.2'			_		rthur, P.G.				
G Z	F	FIELD CLASSIFICATION OF MATERIALS		%	No.		5544546	Ì	) #	N-Value	
ELEV DEPTH		(Description)		REC	Samp No.	RQD %	REMARKS		0.5 ft	N-V	
-56.7	0': SILT\	GRAVEL (GM), fine to co	arse; light gray,				USCS				
	some sh	ell fragments, cálcareous, l	imestone gravel.								
					1					0	
l ‡ 🚧											
-58.4 1.7	4 71. 01.4	YEY SAND (SC), light oliv		-					-		
		y, slightly calcareous, parti									
	onvo gra	y, oligitaly balbarobab, para	any maaratoa.		2					0	
<u> </u>											
<b> </b>					3					35	
<u> </u>										55	
-61.2 <sup>‡</sup> 4.5 <b>////</b>											
	BOTTON	A OF BOREHOLE AT -61.2	P ft				BLOWS PER FOOT: Number requ	iired			

BOTTOM OF BOREHOLE AT -61.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-157-99 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-157-99 N 309420 E 2396317 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 13 0 13 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 J. Picket 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 7/29/99 7/29/99 INCLINED 16. ELEVATION TOP OF BORING -44.8' MLLW 6. THICKNESS OF OVERBURDEN 20.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 65.1' James A. Biddle, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -44.8 0': SILTY SAND (SM), fine; brown, saturated, trace USCS Placed 6" I.D. casing to -45.8'. Bored shell fragments. with Florigel drilling fluid from surface. 0.8': Fine to medium; light gray, with shell 1 82 fragments, Calcareous. Boring location determined from buoy set by Great Lakes Dredging survy 2': Shell fragments. boat. Actual location offset by 20' at N 59.5° E. 2 95 3.5': Fine to coarse. Proposed Location: 79° 42' 43.28432" W 32° 40' 36.04837" N 3 00/0. N: 2396300, E: 309410 5': Fine to coarse; light gray, with gravel, (Quartz). Weight of tools pushed drill string from -44.8' to -45.6'. 4 74 6.5': Minor cementation. 5 91 8': Light gray. 6 63 9.5': Fine; with silt, Borderline SM/ML. 7 51 11': Some gravel. 8 38 12.5': Fine to medium; wet, trace coarse sand. 38 9 14': Moist, with shell fragments. 10 36 15.5': Shell fragments, with silt. 37 11 17': 12 44 13 59 -64.8  $\mp$  20.0 20': SANDY SILT (ML), low plasticity; light brownish BLOWS PER FOOT: Number required gray to gray, low plasticity. to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -65.1 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-158A-99 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 4"x 51/2" x 5" Core Barrel 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-158A-99 N 310331 E 2394659 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 2 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 J. Picket 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 8/1/99 8/1/99 INCLINED 16. ELEVATION TOP OF BORING -43.4' MLLW 6. THICKNESS OF OVERBURDEN 2.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 9' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James A. Biddle, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS LEGEN ELEV DEPTH Samp REMARKS ROD % REC (Description) -43.4\_ 0': (SP-SM). Cleaned soft material to 45.9' by washing through core barrell Time: 16:50 to 16:55 (5 min) From 45.9' to 50.4'. Ran 4.5', Rec. 3.2' (71%), C/L 1.3', U/L -45.9 <sup>–</sup> 2.5 1.3' (Core loss appears to have occured 2.5': Medium soft; greenish gray to dark greenish at all fractures). gray, shells, Limestone RQD=9">4"/54"-16.66% Intensely fractured Drill pressure: Weight of tools Moderately hard: 45.9'-46.6', 49.3'-50.4' Water loss: <25% Moderately soft: 46.6'-47.6'... Tape would not advance past fall-in. Open 71 Time: 16:08 to 16:26 (18 min) From 50.4' to 54.9' Ran 4.5;, Rec. 2.0' (44%), C/L 2.5', U/L 2.5' RQD-0">4"/54"-0% Drill pressure: Weight of tools 7': Medium soft; light gray to brownish gray, Water loss: Approx. 30%. Mechanical fracture at Pull No. 1-Pull No. 2 juntion. All fractures are open and show evidence of core Tape would not advance past 51.4', loss. Soft sandy material appears to have been washed away... 43 1 -54.9 ‡ 11.5 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-21-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 316602 E 2384486 EC-21-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING

-8.6'

18.2'

BOTTOM OF BOREHOLE AT -50.1 ft

with the Unified Soil Classification System

NOTE: Soils visually field classified in accordance

16. ELEVATION TOP OF BORING

17. TOTAL CORE RECOVERY FOR BORING

18. SIGNATURE AND TITLE OF INSPECTOR

8. TOTA	L DEPTH	I OF E	30RING 50.1'	Bob Green, Geologist							
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value		
-40.5_			<b>0':</b> CLAYEY SAND (SC), fine; gray, with shell fragments.		1		NOTE: The weight of the rods drove the splitspoon from 40.5' to 44.1'.		0		
-	- - -				2				5		
-47.1	6.6				3				2		
-48.1	- - 7.6		<b>6.6':</b> SANDY CLAY (CH), high plasticity; dark gray, high plasticity, with shell fragments.		4				4		
-49.1			<b>7.6':</b> CLAYEY SAND (SC), fine; dark gray, with shel fragments, and gravel.	I	5				0		
-50.1	9.6		8.6': Top of Rock 49.1'		6				79		

6. THICKNESS OF OVERBURDEN

7. DEPTH DRILLED INTO ROCK

2/23/88

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb.

hammer falling 30".

-40.5' MLLW

N/A

2/23/88

**Boring Designation** EC-22-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES Failing 314 EC-22-88 N 314392.3293 E 2385584.426 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/16/88 3/16/88 16. ELEVATION TOP OF BORING -43' MLLW 6. THICKNESS OF OVERBURDEN 5.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 2'

18. SIGNATURE AND TITLE OF INSPECTOR

Bob Green, Geologist

ſ	ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	-43 _ - - -44.5 _	- - - - - 1.5		<b>0':</b> CLAY (CH), high plasticity; dark gray, high plasticity, with shell fragments.		1		USCS NOTE: The weight of the rods drove the splitspoon from 43.0' to 44.5'.		0
	-46.0	3.0		<b>1.5':</b> SAND (SC), fine; dark gray, with shell fragments.		2				4
	- - - - - -	- - - - -		<b>3':</b> CLAY (CH), high plasticity; dark gray, high plasticity, with organics.		3				3
l	-48.5 -	5.5				4 5				8
	-50.5			<b>5.5'</b> : SILTY SAND, fine; light gray, with shell fragments, Calcareous.		6		Top of Rock		32
ſ				BOTTOM OF BOREHOLE AT -50.5 ft				BLOWS PER FOOT: Number required		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

50.5

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

8. TOTAL DEPTH OF BORING

**Boring Designation** EC-23-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-23-88 N 314078.8376 E 2387977.543 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/16/88 3/16/88 16. ELEVATION TOP OF BORING -41.2' MLLW 3' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 6' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 Bob Green, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.2\_ 0': SILTY SAND (SM), fine; dark gray, with shell USCS fragments, Calcareous.. 1 22 -42.7 1.5 1.5': CLAYEY SAND (SC), fine; dark greenish gray, with shell fragments. 2 3 -44.2 3.0 3': SILTY SAND, fine; light tan, some gravel, and Top of Rock clay, Calcareous 3 34 Broken. 4 18 5 11

6

BOTTOM OF BOREHOLE AT -50.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.2+

9.0

22

**Boring Designation** EC-23A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 314077.8391 E 2387984.543 EC-23A-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/6/90 6/6/90 INCLINED 16. ELEVATION TOP OF BORING -40.3' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A DEPTH DRILLED IN 90999999999996E-02 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.3\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace shells, and silt. Made new batch of Zeogel mud. 1 20 NOTE: From 41.8' soil was mostly loose -41.8 1.5 but w/ occasional indurated areas **1.5':** SAND (SM), medium to coarse; tan, wet, with gravel, trace shell fragments, Calcareous supplying gravel size particles. 2 24 (Limestone gravel)... 3': Tan and light gray, trace gravel, (Limestone gravel).. 3 25

BOTTOM OF BOREHOLE AT -50.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-24-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-24-88 N 312654.0078 E 2388761.865 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/16/88 3/16/88 INCLINED 16. ELEVATION TOP OF BORING -39.3' MLLW 6. THICKNESS OF OVERBURDEN 6' 17. TOTAL CORE RECOVERY FOR BORING N/A 6' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.3 Bob Green, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -39.3\_ 0': CLAYEY SAND (SP), fine; greenish gray, with USCS shell fragments. 1 6 -40.8 1.5 1.5': CLAYEY SAND (SC), fine; greenish gray, with shell fragments. 2 10 3 6 -43.8 4.5 4.5': No sample recovered.. -45.3 -6.0 6': SILTY SAND, fine; greenish gray, trace clay, Calcareous 15 4 (Limestone) Brokeyn while sampling.. 5 50 6 49 7 26 -51.3  $\pm$  12.0 BOTTOM OF BOREHOLE AT -51.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-24-88A INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 312676.0101 E 2388772.86 EC-24-88A Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/27/88 3/27/88 16. ELEVATION TOP OF BORING -42.2' MLLW 6. THICKNESS OF OVERBURDEN 10.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 2.8 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.8 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.2\_ 0': No samples were taken from 42.2' to 49.0'. Cuttings showed boy (CH) & (SC). See boring log EC-24-88 for additional See remarks.. overburden & top of rock information -49.0 6.8 6.8': No sample recovered.. Pull #1 From 49.0' to 53.0' Run 4.0' Rec 0.0' C.L. 4.0' U.L. 4.0' 0 C.D. 53.'0 Pull #2 -53.0 10.8 From 53.0' to 55.8' 10.8': SANDY, fine, very soft; grayish white. Run 2.8' Rec 1.7' C.L. 1.1' 61 1  $-55.8 \pm 13.6$ BOTTOM OF BOREHOLE AT -55.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-25-88 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-25-88 N 312539.419 E 2390684.931 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/25/88 2/25/88 16. ELEVATION TOP OF BORING -35.5' MLLW 6. THICKNESS OF OVERBURDEN 15.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS ROD % REC (Description) -35.5\_ 0': No sample was recovered from 35.5' to 43.1'.. NOTE: 0 means the weight of the rods drove the splitspoon through the sample. -43.1 <sup>-</sup> 7.6 7.5': CLAY (CH), high plasticity; gray, dry, high plasticity, with shell fragments. 14 1 \_ 9.1 -44.6-9.1': SAND (SP), fine; gray, Poorly Graded, trace silt, and shell fragments. 2 25 -46.1 <sup>-</sup> 10.6 10.6': CLAYEY SAND (SC), fine; gray, dry, with shell fragments. 3 0 4 6 5 23 -50.6-15.1 BOTTOM OF BOREHOLE AT -50.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-26-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER EC-26-88 N 310919.6893 E 2391934.308 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/25/88 2/25/88 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 14.1' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.2 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -42.1\_ 0': CLAY (CH), high plasticity; dark gray, high USCS plasticity, little shell fragments. NOTE: 0 means the weight of the rods drove the splitspoon through the sample. 0 1 2 4 3 0 5 4 5 1 6 4 7 0 8 5 BOTTOM OF BOREHOLE AT -56.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-27-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-27-88 N 310776.0991 E 2393835.383 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/25/88 2/25/98 16. ELEVATION TOP OF BORING -45.3' MLLW 6. THICKNESS OF OVERBURDEN 6' 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.3 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -45.3\_ 0': No sample was recovered from 45.3' to 46.8'.. -46.8 1.5 1.5': CLAY (SC), high plasticity; fine; dark gray, high plasticity, with shell fragments. 8 1

2 11 -49.8 4.5 4.5': SANDY, fine, soft; grayish white, with shell Top of Rock fragments. 48 3 -51.3 + 6.0 BOTTOM OF BOREHOLE AT -51.3 ft

> NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

DDILLI	10.1	DIVISION	INS	TALL	.ATIO	N		SHEET	1	1	
DRILLI	NG L	South Atlantic Division	(	Char	lesto	on H	arbor	of 1	SHE	EETS	
1. PROJECT			9. C	COOR	DINA	TE S	YSTEM	VERTICA	۸L		
Charlestor	bor Entrance Channel Deepening	State Plane - South Carolina NAD83 MLLW									
			10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
2. HOLE NUMBI	ĒR	LOCATION COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL								
EC-28-88		N 308782.5221 E 2395784.862	Failing 314								
3. DRILLING AG			12.	TOTA	AL SA	MPLE	S DISTURBED L	UNDISTURBED			
		ingineers - Savannah District				4	4	(	)		
4. NAME OF DR			13.	TOTA	AL NU	IMBEI	R CORE BOXES 1				
C.D. Justis		RING : DEG FROM : BEARING	14.	ELEV	/ATIC	N GR	OUND WATER NA				
VERTICA INCLINED	L	VERTICAL	15.	DATE	E BOF	RING	STARTED COM 2/25/88	IPLETED 2/25/			
6. THICKNESS	OF OV	ERBURDEN 2'	16. ELEVATION TOP OF BORING -45.4' MLLW								
7. DEPTH DRILLED INTO ROCK 2.5'				17. TOTAL CORE RECOVERY FOR BORING N/A							
				18. SIGNATURE AND TITLE OF INSPECTOR							
8. TOTAL DEPT	8. TOTAL DEPTH OF BORING 49.9'				Bob Green, Geologist						
ELEV DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	/awola	0.5 ft	N-Value	
-45.4	1	0': SILTY SAND (SM), fine; gray, with shell					USCS				
		fragments.			1					32	
-47.4	┆┟┆┝				2						
-47.9 2.5		2': SANDY, fine, very soft; grayish white, with shell fragments.			3		Top of Rock 47.4'			67	
		Nitaginonia.	-/		٦					07	
					4					53	

BOTTOM OF BOREHOLE AT -49.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-29-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 308664.9454 E 2397729.934 EC-29-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/24/88 2/24/88 16. ELEVATION TOP OF BORING -43.9' MLLW 6' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.9' Bob Green, Geologist 0

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-43.9_ - - - - - - -	_		<b>0':</b> SANDY, fine, very soft; grayish white, with shell fragments, Limestone.		1		USCS		78
	-				2				46
- - - - - -					3				24
-49.9					4				60

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BOTTOM OF BOREHOLE AT -49.9 ft

**Boring Designation** EC-29-88A INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 4x5 1/2" Core BBL w/ Diamond 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-29-88A N 308615.9496 E 2397748.946 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 0 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/27/88 3/27/88 16. ELEVATION TOP OF BORING -43.9' MLLW 6. THICKNESS OF OVERBURDEN 7.6' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0'

51.5'

NOTE: Soils visually field classified in accordance

with the Unified Soil Classification System

18. SIGNATURE AND TITLE OF INSPECTOR

Bob Green, Geologist

						in, congre		
ELEV DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-51.5 7.6		0.3': SANDY, fine to coarse, very soft; grayish white, with shell fragments, Limestone.  BOTTOM OF BOREHOLE AT -51.5 ft	89	1		NOTE: Samples were waxed immediately after each Pull.  NOTE: See boring log EC-29-88 for additional information.  Pull #1 From 44.2' to 48.1' Run 3.9' Rec 0.3' C.L. 3.6' U.L. 2.3' TD: 46.8'  Pull #2 From 48.1' to 51.5' Run 3.4' Rec 4.2' C.L. 0.5'		
I		DOT TOW OF BOILDIOLE AT 51.3 IL				BLOWS FLIX FOOT. Number required		

8. TOTAL DEPTH OF BORING

to drive 1-3/8"ID splitspoon w/140 lb.

hammer falling 30".

**Boring Designation** EC-29B-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-29B-90 N 308665.9433 E 2397719.934 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/5/90 6/5/90 16. ELEVATION TOP OF BORING -44.5' MLLW 6. THICKNESS OF OVERBURDEN 7.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.1' James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -44.5\_ 0': SAND (SP), fine to medium; gray, wet, with shell USCS fragments, trace silt, Slightly calcareous. Set 6" casing by own weight to 52.2'. Made new batchof Zeogel mud at 47.5. 17 1 Weight of rods drove splitspoon from 44.5' to 45.3', cont'd drive to 46.0' but had no recovery. Re-drove to 46.0' then cont'd drive to 47.5' w/ two blows from 46.5' to 47.5'. Sample #1 from 44.5' to 47.5'. Weight of rods drove -47.5 3.0 3': CLAYEY SAND (SC), fine to medium; gray, wet, with shell fragments, Slightly calcareous. splitspoon from 47.5' to 50.4', cont'd drive w/ one blow from 50.4' to 52.1'. Sample #2 from 47.5' to 52.1'. 2 1 BOTTOM OF BOREHOLE AT -52.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-30-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-30-88 N 306509.4367 E 2399982.464 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 2/24/88 2/24/88 16. ELEVATION TOP OF BORING -41.1' MLLW 10' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.1' Bob Green, Geologist

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ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-41.1_ - - - - -43.6			<b>0':</b> No sample was recovered from 41.1' to 43.6'						
			<b>2.5':</b> SAND (SP), fine; gray, Poorly Graded, trace silt, with shell fragments.		1				29
-46.6	5.5				2				32
-			<b>5.5':</b> SILTY SAND (SM), fine; gray, with shell fragments, Calcareous.		3				35
-48.6	7.5	[ <del> </del>			4				50
-			<b>7.5</b> ': SANDY, fine, very soft; grayish white, with shell fragments.		5				50
-51.1	10.0				6				49

BOTTOM OF BOREHOLE AT -51.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-31-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-31-88 N 306644.7406 E 2401363.469 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/24/88 2/24/88 16. ELEVATION TOP OF BORING -40.8' MLLW 6. THICKNESS OF OVERBURDEN 7.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 3' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': No sample was recovered from 40.8' to 43.5'.. NOTE: The weight of the rods drove the splitspoon from 40.8' to 42.0'. -43.5 2.7 2.7': SAND (SP), fine; light gray, Poorly Graded, with shell fragments, and clay strata or lenses. -48.0 7.2 7.2': SANDY, fine, very soft; grayish white, with Top of Rock 48.0' shell fragments. -51.0 + 10.2 BOTTOM OF BOREHOLE AT -51.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-32-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-32-88 N 304798.4847 E 2404741.965 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/23/88 2/23/88 INCLINED 16. ELEVATION TOP OF BORING -40.8' MLLW 7.1' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 3' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.9 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': SANDY SILT (MH), dark gray, with shell USCS fragments. 0 1 -41.9<del>T</del> 1.1 1.1': SILTY SAND (SM), fine; dark gray, with shell fragments, and gravel. NOTE: The weight of the rods drove the 2 30 splitspoon from 41.1' ti 42.2'. 3 26 4 25 -46.4 5.6 5.6': SAND (SP), fine; gray, with shell fragments. 5 100 -47.9 \_ \_ 7.1 7.1': SANDY GRAVEL, fine; grayish white, with shell fragments. 6 38

BOTTOM OF BOREHOLE AT -50.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

 $-50.9 \pm 10.1$ 

7

25

**Boring Designation** EC-33-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-33-88 N 316217.6217 E 2382258.989 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/24/88 3/25/88 16. ELEVATION TOP OF BORING -39.9' MLLW 6. THICKNESS OF OVERBURDEN 10.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0.5 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.7 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.9\_ 0': CLAY (CH), high plasticity; gray, high plasticity, USCS with shell fragments, and sand, Lenses of calcareous NOTE: The weight of the rods drove the splitspoon from 39.9' to 44.7' 46.2' to 47.7' 0 1 49.2' to 50.2' 2 6 3 0 7.8': Slightly sandy, slightly calcareous... 4 5 0 5  $-50.2 \pm 10.3$ 10.3': SILTY SAND, fine; grayish white, Calcareous. 6 9 -50.7 + 10.8 Slightly clayey & slightly calcareous.. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.7 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-41-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-41-88 N 330390.2658 E 2356422.875 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/3/88 3/3/88 INCLINED 16. ELEVATION TOP OF BORING -43.5' MLLW 6. THICKNESS OF OVERBURDEN 8.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.7 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH **ELEV** Samp REMARKS RQD % REC (Description) -43.5 0': SANDY CLAY (CH), high plasticity; dark green, USCS 1 0 high plasticity, with shell fragments. -44.2 0.7 0.7': CLAYEY SAND (SC), fine; green and dark 2 18 -45.7-2.2 2.2': SANDY CLAY (CH), high plasticity; gray, high plasticity, glauconitic. 2 3 10 4 -48.7-5.2 5.2': CLAYEY SAND (SC), fine; green, glauconitic, calcareous. 5 0 7.2': Slightly calcareous. 6 13 -51.7+ 8.2 BOTTOM OF BOREHOLE AT -51.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-42-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 330136.6692 E 2358460.935 Failing 314 EC-42-88 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 3/3/88 3/3/88 16. ELEVATION TOP OF BORING -44' MLLW 7.7' 6. THICKNESS OF OVERBURDEN

0'

51.7'

NOTE: Soils visually field classified in accordance

with the Unified Soil Classification System

17. TOTAL CORE RECOVERY FOR BORING

18. SIGNATURE AND TITLE OF INSPECTOR

Bob Green, Geologist

N/A

							, ,		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-44			<b>0':</b> SANDY SILT (MH), black.		1		USCS		0
-47.2 <sup>-</sup>			<b>3.2':</b> SANDY CLAY (CL), low plasticity; gray, low plasticity.		2				19
-	<del>-</del>		<b>4.7':</b> CLAYEY SAND (SC), fine; green, glauconitic.		3				6
-51.7	7.7				4				7
1			BOTTOM OF BOREHOLE AT -51.7 ft				BLOWS PER FOOT: Number required		

7. DEPTH DRILLED INTO ROCK

8. TOTAL DEPTH OF BORING

to drive 1-3/8"ID splitspoon w/140 lb.

hammer falling 30".

**Boring Designation** EC-43-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-43-88 N 328733.8703 E 2359402.218 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 5 1 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 3/3/88 3/3/88 16. ELEVATION TOP OF BORING -41.3' MLLW 8.7' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Bob Green, Geologist

							in, congre		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-41.3 - -	‡		<b>0':</b> CLAY (CH), high plasticity; gray, high plasticity, with shell fragments.		1		USCS		0
- - - -	<del>-</del>    				2				8
- - - - -			<b>3.7':</b> Calcareous, slightly sandy.		3				8
- - - -	<u>+</u>   				4				9
- - - - -			<b>6.7':</b> No longer calcareous.		5				9
-50.0	‡		7.2': Lenses of calcareous (SP).		6				7

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-44-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-44-88 N 327915.4928 E 2362496.399 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/3/88 3/3/88 -37.7' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 12.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp REMARKS RQD % REC (Description) 0': CLAY (CH), high plasticity; gray, high plasticity, USCS 1 0 0.5 some sand, with shell fragments. 0.5': SILTY SAND (SM), fine to coarse; gray, with clay, and shell fragments. 2 15 1.5': Greenish gray. 3 13 4 14 7 5 6 4 -45.7<sup>+</sup> 8.0 8': SANDY CLAY (CL), low plasticity; dark green, low plasticity. 7 9 8 13 -48.7<u>+</u>11.0 11': CLAYEY SAND (SC), fine; dark green. 9 6  $-50.2 \pm 12.5$ BOTTOM OF BOREHOLE AT -50.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-45-88

						Boring Designation	EC-45	-00	
DRILLING LOG	DIVISION	INST	ALLA	TIOI	N		SHEET	Γ	1
DRILLING LOG	South Atlantic Division	Cł	harle	esto	n H	arbor	OF 1	l sh	EETS
1. PROJECT					. –	YSTEM	: VERTIO		
Charleston Harbor Ent	rance Channel Deepening	St	ate l	Pla	ne -	South Carolina NAD83	M	ILLW	'
		10. S	IZE A	ND	TYPE	OF BIT 1-3/8" Splitspoon w/ 5	5 1/2" Fig	shtail	
	OCATION COORDINATES	11. M	1ANUI	FAC	TURE	ER'S DESIGNATION OF DRILL			
	N 326790.5927 E 2362941.628		ailing						
3. DRILLING AGENCY		12. T	OTAL	_SA		•	UNDIST	_	)
U.S. Corps of Enginee	rs - Savannah District				3	3	<u>:</u>	0	
4. NAME OF DRILLER		13. T	OTAL	_ NU	MBEF	R CORE BOXES 0			
C.D. Justiss	I DEO EDOM I DE ADINO	14. ELEVATION GROUND WATER NA							
5. DIRECTION OF BORING VERTICAL INCLINED	DEG FROM BEARING VERTICAL	15. D	ATE I	BOR	RING	STARTED C	OMPLETE 3/5		
6. THICKNESS OF OVERBURD	EN 4.1'	16. E	LEVA	ATIO	N TO	P OF BORING -48.4' MLLV	V		
		17 T	OTAL	CO	RFR	ECOVERY FOR BORING N/A			
7. DEPTH DRILLED INTO ROCK	C 0'		-			ID TITLE OF INSPECTOR			
8. TOTAL DEPTH OF BORING	52.5'		_	_		en, Geologist			
ELEV DEPTH	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value
	ID (SP), fine; gray, Poorly Graded, with shel nts, shell comprising 50%-60% of the sample			1		USCS			0
	1.1': CLAYEY SAND (SC), fine; green, with shell fragments, and sand, lenses of grey (SP).								14
-52.5 4.1	OM OF RODEHOLE AT 52.5.4			3		PLOWS DED FOOT: Number re			5

BOTTOM OF BOREHOLE AT -52.5 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-46-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-46-88 N 326638.9691 E 2364815.671 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/7/88 3/7/88 16. ELEVATION TOP OF BORING -41' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41 USCS 0': SANDY CLAY (CL), low plasticity; dark green, low plasticity, calcareous. 1 37 -42.5 1.5 1.5': SANDY CLAY (CH), high plasticity; dark green, high plasticity, micaceous. 2 15

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-47-88

						Boring Designation	EC-47-	-88			
DRILLING LOG	DIVISION	IN	STALL	ATIO	N		SHEET	•	1		
DRILLING LOG	South Atlantic Division	(	Char	lesto	on Ha	arbor	of 1	SH	EETS		
1. PROJECT						/STEM	: VERTIC				
Charleston Harbor E	ntrance Channel Deepening	;	State	Pla	ne -	South Carolina NAD83	i M	LLW	'		
		10	SIZE	AND	TYPE	OF BIT 1-3/8" Splitspoon w/	5 1/2" Fis	htail			
	LOCATION COORDINATES			-	_	R'S DESIGNATION OF DRILL					
EC-47-88	N 325399.1234 E 2365527.926		Failir								
3. DRILLING AGENCY	O	12	12. TOTAL SAMPLES DISTURBED UNDISTURI								
	eers - Savannah District	4 0									
4. NAME OF DRILLER C.D. Justiss		13	13. TOTAL NUMBER CORE BOXES 0								
5. DIRECTION OF BORING	DEG FROM BEARING	14	ELE\	/ATIC	N GR	OUND WATER NA					
	VERTICAL	15	DATE	E B∩E	NING		COMPLETE				
☐ INCLINED	ICLINED					3/8/88	3/8/	88			
6. THICKNESS OF OVERBUR	RDEN 5.5'	16	ELE\	/ATIC	N TO	P OF BORING -45.1' MLL	<b>W</b>				
7. DEPTH DRILLED INTO RO	CK 0'	17	. TOT	AL CC	RE R	ECOVERY FOR BORING N/A					
		18		_		D TITLE OF INSPECTOR					
8. TOTAL DEPTH OF BORING	50.6'		E		Gree	n, Geologist					
ELEV DEPTH 🖁	FIELD CLASSIFICATION OF MATERIALS		%	Samp No.				√S/ ± (	N-Value		
ELEV DEPTH B	(Description)		RÉC	ашр	RQD %	REMARKS		Blows/ 0.5 ft	≥   -		
	ILTY SAND (SM), fine; gray, with shell			Ø		USCS					
	nents.			1		0000			0		
-46.1 + 1.0   +   +   +											
	ANDY CLAY, low plasticity; dark green, lo	W									
plast	icity.			2					11		
				_					· · ·		
				3					14		
1 40 4 ± 4.0											
-49.1 + 4.0	4': SANDY CLAY, high plasticity; dark greenish							}			
	high plasticity.										
	± , ,			4					12		
-50.6 + 5.5											

BOTTOM OF BOREHOLE AT -50.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-48-88

									DUIII	y De	Signation	<u> </u>	<del>6-40</del>	5-00	
	11 1 11	- I	00	DIVISION	I	NSTAI	LATIC	N					SHEE	T	1
ן טו	RILLIN	IG L	.UG	South Atlantic Divi	sion	Cha	rlest	on H	arbor				OF	1 sH	IEETS
1. PRO	JECT								YSTEM			:	VERT		
Cha	rleston	Harl	or Entr	ance Channel Deepe	enina	Sta	e Pla	ane -	South 0	Caroli	na NAD83	:	Ν	/LLW	/
	11001011	···	301 <b>L</b> 110	and onamo Book							Splitspoon	w/ 5 1	/2" F	ishtai	I
2. HOLE	NUMBE	R	LO	CATION COORDINATES	1	1. MA	NUFAC	CTURE	ER'S DESI	GNATIO	ON OF DRILL				
EC-	48-88		N	N 325179.5234 E 23	67502.985	Fail	ing 3	14							
3. DRILI	ING AGE	ENCY	•		1		ΓAL SA		ES .	: :	DISTURBED	::	JNDIST	URBEI	D
U.S.	Corps	of E	ngineer	s - Savannah District	t			5			5			0	
4. NAM	OF DRI	LLER			,	13. TOTAL NUMBER CORE BOXES ()									
C.D.	C.D. Justiss														
	DIRECTION OF BORING DEG FROM BEARING  ✓ VERTICAL VERTICAL						VATIC	JN GR			NA				
	ERTICAL NCLINED			VERTICAL	1	5. DA	ГЕ ВОІ	RING		START	ED 3/7/88	CON	IPLETE 3/7	ED <b>7/88</b>	
6. THIC	KNESS C	ERBURDE		6. ELI	VATIC	OT NO	P OF BOR	ING	-42.7' M	ILLW					
				7. TO	TAL CO	ORE R	RECOVERY	/ FOR E	BORING N/	Ά					
7. DEPT	H DRILL	TO ROCK	0'					ND TITLE C							
8. TOTA	L DEPTH	ORING		0. 0.0	_		en, Geol	_							
								T		- 3				_	Φ
ELEV	FIELD CLASSIFICATION OF MATERIALS (Description)						Samp No.	۵.			REMARKS			Blows/ 0.5 ft	N-Value
		E		(Description)		RE	Sam	RQD %						₩0.	ź
-42.7_			0': CLA	YEY SAND (SC), fine; gr	een and light				USCS						
-	-		green, w	vith shell fragments.											
] -	F						1								0
_	Ė														
l															
-44.8	_ 2.1	<u>/•//•/</u>	0.41.04	NDV OLAV (OL) Januaria	- C-20 - d- d	4		-							
1 -	L		low plas	NDY CLAY (CL), low pla	sticity; dark green,										
-	-		iow pias	dicity.			2								14
-	F														
-46.3	3.6					_		-							
_			3.6': SA	NDY CLAY (CL), high pla	asticity; dark green,										
1 -	E		nign pia	sticity, with lenses of SP.			3								14
-	-														' '
-	<u> </u>							1							
-	Ė.														
-	Ė						4								10
-							-								10
-	E						L								
] =	F														
-	F						_								46
=	‡						5								16
-50.8	0.8 + 8.1														
								-							_

BOTTOM OF BOREHOLE AT -50.8 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-49-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES Failing 314 EC-49-88 N 324226.565 E 2367669.18 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 3/7/88 3/7/88 16. ELEVATION TOP OF BORING -42.3' MLLW 8.7' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51' Bob Green, Geologist

							,		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-42.3 - - - -45.0	-		0': SANDY SILT (MH), black, with shell fragments.		1		USCS		0
-			<b>2.7':</b> SANDY CLAY (CL), low plasticity; green, low plasticity, slightly calcareous.		2				32
-48.0	5.7				3				16
	- - - - - -		<b>5.7':</b> SANDY CLAY (CH), high plasticity; dark green, high plasticity, slightly micaceous.		4				12
-51.0	8.7				5				15

BOTTOM OF BOREHOLE AT -51.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-50-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-50-88 N 324260.8792 E 2369221.186 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED : VERTICAL 15. DATE BORING 3/8/88 3/8/88 16. ELEVATION TOP OF BORING -38.5' MLLW 6. THICKNESS OF OVERBURDEN 11.4' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.9 Bob Green, Geologist

8. 1017	AL DEPTH	I OF	BORING 49.9	<u> </u>		Gre	en, Geologist		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-38.5	+		0': No sample recovered						
-39.4	0.9		OOL OUTVOAND (OM) Consider to see with about	_		-			
:	<u>+</u>	· [	<b>0.9':</b> SILTY SAND (SM), fine; dark gray, with shell fragments.						
:	<u> </u>		1.5': Light gray, calcareous.		1				23
-	<u>+</u>								
:	‡	- [   [				1			
-	‡				_				40
:	‡	┆┼┆┪			2				10
-	Ŧ	- [   [							
	E								
	$\pm$				3				7
-43.9	5.4	- [   [							
-43.9	3.4		5.4': CLAYEY SAND (SC), fine; light gray, with shell			1			
-	‡		fragments, calcareous.		,				
:	‡				4				9
-	Ŧ								
	Ŧ		<b>6.9':</b> Dark green.						
-46.5	8.0				5				6
-40.5	0.0		8': SANDY CLAY (CL), low plasticity; dark green,						
:	‡		low plasticity.			1			
] -	‡								
:	‡				6				11
-48.4	9.9					1			
-	E		9.9': SANDY CLAY, high plasticity; dark green, high plasticity.						
]	+		plasticity.		7				13
-49.9	11.4								
-49.9	11.4		POTTOM OF PODELIOLE AT 40.0 (						

BOTTOM OF BOREHOLE AT -49.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-51-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-51-88 N 323209.9488 E 2369503.402 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/8/88 3/8/88 INCLINED 16. ELEVATION TOP OF BORING -39.2' MLLW 6. THICKNESS OF OVERBURDEN 11.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 Bob Green, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.2\_ 0': SILTY SAND (SM), fine; light gray, with shell USCS fragments, calcareous, slightly clayey. 1 0 2 13 3 12 4 9 6.9': Predominantly shell fragments. 5 3 -47.6<sup>+</sup> 8.4 8.4': SANDY CLAY (CL), low plasticity; dark gray, low plasticity. 6 15

BOTTOM OF BOREHOLE AT -50.6 ft

high plasticity, slightly calcareous.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

9.9': SANDY CLAY (CH), high plasticity; dark gray,

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-49.1<sup>+</sup> 9.9

-50.6  $\pm$  11.4

7

17

**Boring Designation** EC 52 99

									Boring Designation	EC-52	-88		
DB	ILLIN	IG I	06	DIVISION	IN	STALL	ATIO	N		SHEE	Γ	1	
ן אט	ILLIN	IG L	UG	South Atlantic Division		Char	lesto	on H	arbor	OF '	<b>1</b> sh	EETS	
1. PROJE	ECT				-				YSTEM	: VERTI			
Charl	leston	Hark	or Entr	ance Channel Deepening		State	Pla	ne -	South Carolina NAD83	N	1LLW	1	
									OF BIT 1-3/8" Splitspoon w/	5 1/2" Fi	shtail		
2. HOLE	-	R		CATION COORDINATES			-	-	ER'S DESIGNATION OF DRILL				
EC-5				N 323244.2544 E 2371025.409		Failir							
3. DRILLI				0 1 51 11 1	12	12. TOTAL SAMPLES DISTURBED UNDISTU							
			ngıneer	s - Savannah District		4 4							
4. NAME					13	13. TOTAL NUMBER CORE BOXES 0							
5. DIREC	Justis		INC	: DEG FROM : BEARING	14	. ELE\	/ATIC	N GR	OUND WATER NA				
	ERTICAL		and	VERTICAL :	45	D.4.T.		21110	STARTED (	COMPLETE	D		
	CLINED				15	. DATI	BOF	RING	3/14/88	3/14	4/88		
6. THICK	NESS O	F OVE	ERBURDE	5.8'	16	. ELE\	/ATIC	OT NO	P OF BORING -44.1' MLL	N			
7 DEPTH	- DRILLI	ED IN	TO ROCK	0'	17	. TOT	AL CC	RE R	RECOVERY FOR BORING N/A				
					18		_		AND TITLE OF INSPECTOR				
8. TOTAL	_ DEPTH		ORING	49.9'		E		Gree	en, Geologist				
		LEGEND		FIELD CLASSIFICATION OF MATERIALS		%	Samp No.				/S/ #	N-Value	
ELEV	DEPTH	EE		(Description)		RÉC	dme	RQD %	REMARKS		Blows/ 0.5 ft	-\ -\	
-44.1			OI: CLAY	Y (CH), high plasticity; black, high plast	li aitu		Ø	-	USCS				
I±	-		slightly s		licity,				0303				
1 7	-		og , .				1					0	
-45.4	1.3												
1 ‡	-			AYEY SAND (SC), fine; pale green,									
1 #	-		calcared	ous, slightly silty.			2					13	
1 ‡	-	/•///										13	
1 ‡	-												
1 ±	_		2.8': Sh	ell fragments.									
1 ±	-						3					6	
1 +	-												
I Ŧ	-							-					
1 7	± <b>%//</b> 2												
#	<u> </u>						4					16	
1 ‡	‡ <b>////</b>												
-49.9	5.8	6///											

BOTTOM OF BOREHOLE AT -49.9 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-53-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-53-88 N 322313.2911 E 2371171.601 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/15/88 3/15/88 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 8.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1 Bob Green, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.6\_ USCS 0': CLAYEY SAND (SC), fine; dark gray, with shell fragments. 1 0 -42.6 1.0 1': SILTY SAND (SM), fine; light gray, calcareous. 2 25 3 37 4 25 5 31 7': Pale green. 6 30 <u>-50.1</u>±

BOTTOM OF BOREHOLE AT -50.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-54-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-54-88 N 322302.6242 E 2372799.618 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/15/88 3/15/88 16. ELEVATION TOP OF BORING -38.9' MLLW 6. THICKNESS OF OVERBURDEN 11.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.9 USCS 0': CLAY (CH), high plasticity; black, high plasticity, with sand, calcareous. 1 0 -44.2 5.3 5.3': CLAYEY SILTY SAND (SM), fine; gray, with shell fragments, calcareous. 2 26 6.8': Pale greenish gray. 3 26 11 4 5 32 <u>-50.2  $\downarrow$  11.3</u> BOTTOM OF BOREHOLE AT -50.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-55-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 321334.659 E 2372936.818 EC-55-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 3/15/88 3/15/88 16. ELEVATION TOP OF BORING -40.1' MLLW 8.4' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 1.5' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Bob Green, Geologist

							, 3		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-40.1	-		0': CLAY (CH), black, with sand, Calcareous.				USCS		
	‡		•						
_	‡								
	‡								
1 :	‡								_
-	<u> </u>				1				0
1 :	<u> </u>								
1 -	±.								
	<u> </u>								
-44 0	3.9								
-	<del>- 5.5</del>	•	3.9': SAND (SP), fine; gray, Poorly Graded, with	1		1			
-	+	• •	shell fragments, Calcareous		_				
1 -	F	•	Lenses of brown silty sand.		2				38
-	F								
-	Ŧ I					1			
-	<u> </u>	• •			3				22
	‡	• •			3				33
-	‡	•							
-	<b>=</b>								
	‡				4				47
1 -	<u> </u>	• •			-				41
-48.5	8.4	•							
1 :	<u> </u>		8.4': SILTY SAND, fine; light gray, Calcareous.						
1 -	<u>+</u>				5				34
1	<u>+</u>								"
-50.0	9.9								

NOTE: Soils visually field classified in accordance

BOTTOM OF BOREHOLE AT -50.0 ft

with the Unified Soil Classification System

**Boring Designation** EC-56-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-56-88 N 321334.9895 E 2374544.834 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/18/88 3/18/88 16. ELEVATION TOP OF BORING -41.4' MLLW 6. THICKNESS OF OVERBURDEN 8.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 Bob Green, Geologist

							, 0		
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-41.4_			<b>0':</b> CLAYEY SAND (SC), fine; dark gray, with shell fragments.		1		USCS		0
-47.2	<u> </u>		4.8': Lens of fat clay		2				6
-48.7	7.3		<b>5.8':</b> CLAY (CH), high plasticity; dark gray, high plasticity, with sand, Calcareous sand		3				4
-50.2	8.8		<b>7.3':</b> SILTY SAND (SM), fine; dark gray, Calcareous		4				15
			BOTTOM OF BOREHOLE AT -50.2 ft				BLOWS PER FOOT: Number required		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-57-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-57-88 N 320379.0166 E 2374647.033 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/27/88 3/27/88 16. ELEVATION TOP OF BORING -38.5' MLLW 2.9 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 9' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.5\_ USCS 0': CLAY (CH), high plasticity; black, high plasticity, with sand. 1 0 -41.4 2.9 2.9': LIMESTONE, fine, Slightly Clayey. 2 33 3 46 4 39 5 34 6 34 7 30 <u>-50.4</u>‡11.9 BOTTOM OF BOREHOLE AT -50.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-57A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 320380.0139 E 2374634.032 EC-57A-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/20/90 5/20/90 INCLINED 16. ELEVATION TOP OF BORING -40' MLLW 6. THICKNESS OF OVERBURDEN 6' 17. TOTAL CORE RECOVERY FOR BORING N/A 4.2 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40 0': CLAYEY SILT (MH), dark gray, wet, trace sand, USCS and shell fragments, Slightly calcareous.. Pull #1 0 1 From 46.0' to 47.8' Run 1.8' (Blocked off) Rec. 0.0' C.D. 1.8' Taped 46.6' Drilling Time: 13 Min Hyd. Pressure: 100 PSI Water Return: 100% 4.5 -44.5 4.5': SILTY SAND (SM), fine to medium; light gray, 2 50 wet, trace gravel, Limestone gravel. -45.4 5.4 5.4': No Recovery.

BOTTOM OF BOREHOLE AT -50.2 ft

Limestone.

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

7.8': SANDY, medium to coarse, soft; light gray,

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

Top of Rock 47.8'

From 47.8' to 50.2' Run 2.4' Rec 2.4' Drilling Time: 13 Min Taped 50.2'

Pull #2

Box

-47.8

-50.2 + 10.2

7.8

**Boring Designation** EC-58-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 320373.3495 E 2376259.051 EC-58-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/24/88 3/24/88 16. ELEVATION TOP OF BORING -41.3' MLLW 6. THICKNESS OF OVERBURDEN 10.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.5' Bob Green, Geologist

6: 10 17 (E BE1 11	101 -	01.0	L	טטכ	Oice	ii, deologist		
ELEV DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-41.3		<b>0':</b> CLAY (CH), high plasticity; gray, high plasticity, with shell fragments, and sand.		1		USCS		0
<u> </u>				2				9
				3				2
		7.2': Thin lenses of calcareous sand		4				6
-51.5 10.2		8.7': Lenses of calcareous, poorly graded sand		5				3
		BOTTOM OF BOREHOLE AT -51.5 ft				BLOWS PER FOOT: Number required		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-59-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-59-88 N 319393.3906 E 2376430.256 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/28/88 3/28/88 INCLINED 16. ELEVATION TOP OF BORING -36.6' MLLW 6. THICKNESS OF OVERBURDEN 6' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 7.5 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1 Bob Green, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp REMARKS RQD % REC (Description) -36.6 0': SANDY CLAY (CH), high plasticity; black, high USCS plasticity, with shell fragments. 1 7 -38.1 1.5 1.5': SILTY SAND (SM), fine; dark gray, 2 Calcareous. 18 -39.1 -2.5 2.5': SANDY ELASTIC SILT CLAYEY SAND (SC), 3 fine; light gray, Slightly calcareous.. 3': Bluish green gray. 4 16 5 4 -42.6 6.0 6': SILTY SAND, fine; grayish white, Calcareous, slightly indurated. 15 6 7 26 8 3 9 49 10 58 -50.1 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.1 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-59A-90

DRILLING LOG    DIVISION   South Atlantic Division   Charleston Harbor   QF 1 SHEET 1   QF 1 SHEETS										Boring Designation	EC-59	M-90	<u> </u>
1. PROJECT Charleston Harbor Entrance Channel Deepening 1. OCORDINATE SYSTEM State Plane - South Carolina NAD83 MLLUW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL EC-59A-90 N 319263 E 2376390 SPILLING AGENCY U.S. Corps of Engineers - Savannah District 12. TOTAL SAMPLES USAMPLES USAMPLES DISTURBED UNDISTURBED UNDISTURBED UNDISTURBED UNDISTURBED UNDISTURBED 13. TOTAL NUMBER CORE BOXES 14. ELEVATION GROUND WATER NA 15. DATE BORING STARTED S/20/90 START	DBILLING I	OG	_									-	1
State Plane - South Carolina NAD83   MLLW			So	uth Atlantic Di	vision								IEETS
2. HOLE NUMBER													
2. HOLE NUMBER EC-59A-90 N 319263 E 2376390 Faline and shall fragments, Calcareous.  2. HOLE NUMBER CORE DORING ASSISTED N 319263 E 2376390 FIELD REASON Sightly calcareous.  2. HOLE NUMBER CORE DATE OF BORING ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED ASSISTED AND ASSISTED AND ASSISTED AND ASSISTED ASSISTED AND ASSISTED ASSISTED AND ASSISTED ASSISTED AND ASSISTED A	Charleston Har	bor E	ntrance	Channel Dee	pening	_							
S. DRILLING AGENCY U.S. Corps of Engineers - Savannah District  12. TOTAL SAMPLES 3 3 0  13. TOTAL NUMBER CORE BOXES 1  4. NAME OF DRILLER C.D. JUSTISS 5. DIRECTION OF BORING VERTICAL INCLINED  3. TOTAL NUMBER CORE BOXES 1  4. LELEVATION GROUND WATER NA  5. DIRECTION OF BORING VERTICAL INCLINED  6. THICKNESS OF OVERBURDEN  3. TOTAL DEPTH OF BORING S. TOTAL DEPTH OF BORING  9. FIELD CLASSIFICATION OF MATERIALS (Description)  18. SIGNATURE AND TITLE OF INSPECTOR JAMPS Arthur, Geologist  49.8'  19. TOTAL CORE RECOVERY FOR BORING JAMPS ARTHUR, Geologist  10. CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Calcareous Limestone gravel. 3. SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontail open joints at 46.3, 46.7, 47.5', 47.9', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.  49.8 6.8											5 1/2" Fi	shtai	
3. DRILLING AGENCY U.S. Corps of Engineers - Savannah District 12. TOTAL SAMPLES 3 DISTURBED 3 0  13. TOTAL NUMBER CORE BOXES 1 14. ELEVATION GROUND WATER NA  15. DATE BORING 15. DATE BORING 15. DATE BORING 16. ELEVATION TOP OF BORING 17. TOTAL CORE RECOVERY FOR BORING 18. TOTAL DEPTH OF BORING 19. FIELD CLASSIFICATION OF MATERIALS 19. DEPTH OF BORING 10. CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Slightly calcareous.  10. CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Calcareous 19. SANDY GRAVEL, medium to coarse; light gray, Porous 10. Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 49.9', 48.2', 49.1'. & 49.8'. Core losses from 49.6' to 49.8'. Water Return: Lost all water at 48.5'.		- 1								ER'S DESIGNATION OF DRILL			
U.S. Corps of Engineers - Savannah District 4. NAME OF DRILLER C.D. JUSTISS 5. DIRECTION OF BORING VERTICAL INCLINED 6. THICKNESS OF OVERBURDEN 8. TOTAL DEPTH OF BORING DEPTH OF BORING DEPTH OF BORING 8. TOTAL DEPTH OF BORING OF CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Calcareous Limestone gravel.  45. 8. 2.8 45. 8. 2.8 46.0 3.0  2.8': SILTY GRAVEL (GM), fine to coarse; light gray, Porous Barriestone gravel. 3': SANDY GRAVEL, medium to coarse; light gray, Porous Barriestone gravel. 49.8' 6.8  49.8' 6.8  40.0 40.0 50.0  40.0 40.0 40.0 40.0 40.0 40.0 40.0			N 319	263 E 23763	90						·		
4. NAME OF DRILLER C. D. Justiss 5. DIRECTION OF BORING			oro C	ovannah Diatri	ot .	12.	. тот	AL SA		•	UNDIST	-	D
C.D. Justiss  5. DIRECTION OF BORING VERTICAL INCLINED VIA INCLINED VERTICAL INCLINE			ers - 38	avannan Distri	Cl	4.0				<del>`</del>	<u>:</u>	U	
5. DIRECTION OF BORING VERTICAL VERTICA													
VERTICAL INCLINED 15. DATE BORING STARTED 5/20/90 5/20/90  6. THICKNESS OF OVERBURDEN 3' 16. ELEVATION TOP OF BORING -4.3' MLLW  7. DEPTH DRILLED INTO ROCK 3.8' 17. TOTAL CORE RECOVERY FOR BORING N/A  8. TOTAL DEPTH OF BORING 49.8' 18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  ELEV DEPTH OF BORING (Description) 19. CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Slightly calcareous.  44.8 2.8 46.0 3.0 3.0 2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Box 1 linesely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'	0.12.00.00.00	RING		DEG FROM	BEARING	14. ELEVATION GROUND WATER NA							
INCLINED   S/20/90   S/2				VERTICAL		15	DAT	F BOF	RING	• -			
7. DEPTH DRILLED INTO ROCK  8. TOTAL DEPTH OF BORING  9.8'  FIELD CLASSIFICATION OF MATERIALS (Description)  10': CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Slightly calcareous  10': CLAYEY SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'  49.8 6.8 17. TOTAL CORE RECOVERY FOR BORING N/A  18. SIGNATURE AND TITLE OF INSPECTOR James Arthur, Geologist  19.2	L INCLINED				<u>:</u>						5/20	0/90	
8. TOTAL DEPTH OF BORING  8. TOTAL DEPTH OF BORING  49.8'  FIELD CLASSIFICATION OF MATERIALS (Description)  O': CLAYEY SILT (MH), dark gray, wet, trace sand, and shell fragments, Slightly calcareous  43. 45.8 2.8 46.0 3.0 28': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3**: SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 48.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'. Core losses from 49.6' to 49.8'.	6. THICKNESS OF OV	/ERBUR	DEN	3'		16.	ELE'	/ATIC	N TO				
8. TOTAL DEPTH OF BORING 49.8'  ELEV DEPTH	7. DEPTH DRILLED IN	TO RO	CK	3.8'		17.	. TOT	AL CC	RER	RECOVERY FOR BORING N/A			
ELEV DEPTH OF THE PROPERTY OF	0 TOTAL DEDTIL OF												
-45.8 2.8  -46.0 3.0 2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'										rthur, Geologist			
-45.8 2.8  -46.0 3.0 2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'		FIELD CLASSIFICATION OF MATERIALS (Description)								DEMARKO		NS/	l lie
-45.8 2.8  -46.0 3.0 2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'	LELEN DEPIN O	ELEV DEPTH 0 HELD CLASSIFICATION OF MATERIALS (Description)								REWARKS		Bo 5.0	>
and shell fragments, Slightly calcareous  1  2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'													
2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.	1 ‡												
2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.	1 ±												
2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.	1 ‡							1					٥
2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.								'					"
2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.	$\pm$												
2.8': SILTY GRAVEL (GM), fine to coarse; light gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.	45 0 + 2 0												
gray, wet, some sand, and shell fragments, Calcareous Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'.		2.81.5	SII TY GE	RAVEL (GM) find	e to coarse: light		1	2					2 /
Calcaled Survey.  Limestone gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'.  Core losses from 49.6' to 49.8'													اك
June Storie gravel.  3': SANDY GRAVEL, medium to coarse; light gray, Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'													
Porous Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'										C.L. 0.2'			
Badly broken from 46.0' to 46.3' & 48.2' to 49.1'. Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'. Core losses from 49.6' to 49.8'										Drilling Time: 6 min			
Intensely to highly jointed w/ near horizontal open joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & 49.6'.  Core losses from 49.6' to 49.8'	1 ± -	Badly broken from 46.0' to 46.3' & 48.2' to 49.1									0 E'		
-49.8 6.8 Core losses from 49.6' to 49.8'		Intens	sely to high	ghly jointed w/ ne	ear horizontal open			1		Water Return. Lost all water at 4	0.5 .		
-49.8 6.8		joints at 46.3', 46.7', 47.5', 47.9', 48.2', 49.1', & Core losses from 49.6' to 49.8'											
		Core losses from 49.6° to 49.8°											
		10.8 + 6.8											
	-49.8   6.8	0.8 + 6.8 BOTTOM OF BOREHOLE AT -49.8 ft								BLOWS PER FOOT: Number re	quired		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-60-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 319408.7196 E 2378016.27 EC-60-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED VERTICAL VERTICAL 15. DATE BORING 3/19/88 3/19/88 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 9.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.3' Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) **0':** CLAY (CH), high plasticity; dark gray, high plasticity, with shale fragments, and sand. -41.6\_ USCS 1 0 0.7': Gray. 2 12 2 3 7 4 5 4

6

7

BOTTOM OF BOREHOLE AT -51.3 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-51.3

8

3

**Boring Designation** EC-61-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-61-88 N 318481.7599 E 2378186.465 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 3/25/88 3/25/88 16. ELEVATION TOP OF BORING -42.1' MLLW 6. THICKNESS OF OVERBURDEN 3.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 4.5' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Bob Green, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	3.4		<b>0':</b> SANDY CLAY (CH), high plasticity; black, high plasticity.		1		USCS		0
- - - - -	+ + + + + + +		3.4': SILTY SAND, fine; grayish white, Calcareous Limestone Slightly Clayey.		2				32
-					3				27
-50.0	7.9				4				41

BOTTOM OF BOREHOLE AT -50.0 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-62-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 318512.0783 E 2379714.476 EC-62-88 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED VERTICAL 15. DATE BORING 3/25/88 3/25/88 16. ELEVATION TOP OF BORING -41.6' MLLW 6. THICKNESS OF OVERBURDEN 9.6' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0'

18. SIGNATURE AND TITLE OF INSPECTOR

8. TOTAL DEPTH OF BORING 51.2'				- 18. SIGNATURE AND TITLE OF INSPECTOR  Bob Green, Geologist						
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-41.6 <sub>-</sub>			<b>0':</b> CLAY (CH), high plasticity; gray, high plasticity, with shell fragments.			1		USCS		0
-43.7_	- - - - - - 2.1		<b>0.6':</b> SILTY SAND (SM), fine; dark gray to black, Calcareous.			2		NOTE: 0 means the weight of the rods drove the splitspoon through the sample.		4
			<b>2.1':</b> CLAY (CH), high plasticity; dark gray, high plasticity, with shell fragments.			3				0
- - - - -						4				5
- - - - -						5				6
- - - - -	- - - - -					6				2
-51.2	_					7				8

NOTE: Soils visually field classified in accordance

BOTTOM OF BOREHOLE AT -51.2 ft

with the Unified Soil Classification System

**Boring Designation** EC-63-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-63-88 N 317506.1272 E 2379925.69 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/25/88 3/25/88 16. ELEVATION TOP OF BORING -40' MLLW 6. THICKNESS OF OVERBURDEN 8.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 2.5 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.8 Bob Green, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40 0': CLAYEY SAND (SC), high plasticity; fine; dark USCS gray, high plasticity, with shell fragments, Slighly NOTE: The weight of the rods drove the splitspoon from 40.'0' to 44.8'. 0 1 2 6 3 4 4 -48.3 — 8.3 8.3': SILTY SAND, fine; grayish white, Calcareous, slightly indurated... 5 38 6 30 <u>-50.8</u> + 10.8 BOTTOM OF BOREHOLE AT -50.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-64-88 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-64-88 N 317459.4776 E 2381597.719 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/25/88 3/25/88 16. ELEVATION TOP OF BORING -37.9' MLLW 6. THICKNESS OF OVERBURDEN 13.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.1 Bob Green, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': SILTY SAND (SM), fine; dark gray, with shell -37.9\_ USCS fragments, Calcareous, slightly clayey... NOTE: 0 means the weight of the rods drove the splitspoon through the sample. 0 1 2 4 -46.6 8.7 8.7': CLAYEY SAND (SC), fine; dark gray, with shell fragments, Calcareous. 3 9 -48.1 + 10.2 10.2': CLAY (CH), high plasticity; dark gray, high plasticity, with shell fragments. 0 4 5 3 BOTTOM OF BOREHOLE AT -51.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-65-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 312713.0424 E 2388924.856 EC-65-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/14/89 4/14/89 16. ELEVATION TOP OF BORING -45.7' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) <del>-45</del>.9+ 0.2 0': CLAY (CH), soft; high plasticity; greenish gray, 1 USCS high plasticity, Calcareous. NOTE: Set 6" casing to -46.7'. MLW by 0.2': SAND (SM), fine to medium; light brown to tan, 2 32 own weight. some shell fragments, and gravel, Calcareous Gravel (cemented sand. Light grey to white streaks)... 1.5': No white streaks.. 3 59 57 4.5': No gravel.. 4 43 6': No shells.. 56 5 29 <u>-54.7</u> + 9.0 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-65A-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL N 333956.6528 E 2353509.165 EC-65A-89 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 16 16 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/10/89 12/10/89 16. ELEVATION TOP OF BORING -30.9' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 David Belville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.9 0': SILTY SAND (SM), fine; gray. USCS 3 1 NOTE: Set 6" casing to bottom of channel. 2 9 Mixed Zeogel mud. -34.0 3.1 3.1': SILT (MH), high plasticity; gray, high plasticity. 3 2 4 4 5 3 7.4': Olive. 6 15 7 10 9.6': SANDY, fine; olive green. 10.5': SANDY, fine; dark green. 8 2 9 5 10 4 11 8 15.6': Olive. 12 12 18': Dark green. 13 12 19.5': Olive. 14 18 15 21 16 19 -54.9 = 24.0 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-66-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES N 313122.5056 E 2389010 EC-66-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/16/89 4/16/89 16. ELEVATION TOP OF BORING -47.9' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4' James Arthur, P.G.

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-47.9_ - - - -	_		<b>0':</b> SILTY SAND (SM), fine to medium; light brown to tan, some shell fragments, trace limestone fragments, some light grey to white streaks.		1		USCS		92
- - - -			<b>1.5':</b> Light tannish gray, trace gravel, and shell fragments.						30
- - - - -					2				24
-			<b>4.5':</b> Light gray, some shell fragments.		3				21
-55.4			6': Light gray to gray, trace gravel.		4				60

BOTTOM OF BOREHOLE AT -55.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-66A-89 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-66A-89 N 332933.5739 E 2353033.363 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 12/5/89 12/5/89 16. ELEVATION TOP OF BORING -38.4' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 David Belville, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -38.4\_ 0': SILT (ML), low plasticity; dark green and black, USCS low plasticity. 1 0 1.6': SILT, low plasticity; dark green, low plasticity. 2 4 3.1': SANDY SILT, low plasticity; fine; dark green, low plasticity. 3 0 7 4 5 0 7.5 **-**45.9 -7.5': CLAY (CH), high plasticity; dark green, high plasticity. 6 15 7 12 10.6': SANDY, fine; dark green. 8 9  $-50.5 \pm 12.1$ 12.1': SILT (MH), high plasticity; dark green, high plasticity. 9 16 10 23 11 19 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-67-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-67-89 N 313747.7863 E 2387732.609 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 4/16/89 4/16/89 INCLINED 16. ELEVATION TOP OF BORING -46.4' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.4\_ **0**: CLAY (CH), soft; high plasticity; green, high plasticity, trace shell fragments, Slightly calcareous... USCS NOTE: Set 6" casing to -46.4' MLW by own weight. 0 1 NOTE: Splitspoon w/ 20' rods dropped inside casing to bottom of harbor. -48.5 2.1 Weight caused splitspoon to penetrate 2.1': SILTY SAND (SM), fine to medium; brown to soil from 46.4' to 47.9', cont'd drive to 2 32 tan, I, some shell fragments, trace gravel, (Cemented 49.4'. sand gravel).. 3 27 4 30 5 50 7.5': SILTY SAND, fine to medium; gray, some shell fragments, Calcareous... 6 100 -55.4 9.0 BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-67A-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-67A-89 N 332816.8834 E 2354617.391 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 18 0 18 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 12/10/89 12/10/89 INCLINED 16. ELEVATION TOP OF BORING -28.4' MLLW 6. THICKNESS OF OVERBURDEN 27' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 David Belville, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -28.4 0': SILTY SAND (SM), fine to medium; gray, dry, USCS 5 1 some shell fragments. Weight of rods & hammer drove -29.9 1.5 splitspoon from: 1.5': No recovery .. 28.4' to 28.9' 2 0 29.9' to 31.4' 34.4' to 34.9' 41.9' to 42.9' 3 8 -32.9 4.5 Set 6"casing to bottom of channel. 4.5': SANDY SILT (MH), high plasticity; fine; dark Mixed Zeogel mud. 4 3 green, high plasticity. 4 5 6 6 7 5 10.5': SILT, high plasticity; olive green, high plasticity, Stiff nodules.. 8 24 9 14 13.5': SILT, high plasticity; dark green, high 10 3 plasticity. 7 11 12 9 13 10 -47.9 = 19.5 19.5': CLAY (CH), high plasticity; olive green, high 14 10 plasticity. <u>-50.0  $\pm$  21.6</u> 15 9 21.6': SILT, high plasticity; dark green, high plasticity. 16 16 17 17 18 15 <u>-55.4 ‡</u> 27.0 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-68-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-68-89 N 331694.7895 E 2354062.609 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 12/11/89 12/11/89 INCLINED 16. ELEVATION TOP OF BORING -29.2' MLLW 6. THICKNESS OF OVERBURDEN 25.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 David Belville, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV DEPTH Samp REMARKS RQD % REC (Description) -29.2 0': SANDY SILT (MH), high plasticity; fine; dark USCS 1 0 gray, high plasticity, with shell fragments. <u>-3</u>0.7∃ 1.5 1.5': CLAY (CH), high plasticity; dark gray, high 2 4 plasticity. 3 5 -33.7 4.5 4.5': CLAYEY SAND (SC), fine; green. 4 12 5 18 -36.7 7.5 7.5': SILTY SAND, fine to medium; green and dark 6 33 gray. 7 23 -39.7 = 10.5 10.5': SANDY SILT (MH), high plasticity; fine; olive green, high plasticity, cemented silt nodules up to 8 15 1/2" dia.. 9 8 \_ 13.5 13.5': SANDY SILT (ML), low plasticity; fine; dark 10 0 green, low plasticity. -44.2<sup>±</sup> 15.0 15': SANDY SILT (MH), high plasticity; fine; dark green, high plasticity. 11 3 12 0 13 12 14 12 15 10 16 13 17 20 -54.7 = 25.5 BOTTOM OF BOREHOLE AT -54.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-69-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division **Charleston Harbor** 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-69-89 N 331810.1498 E 2355916.593 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 25 25 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED 15. DATE BORING 12/6/89 12/6/89 INCLINED 16. ELEVATION TOP OF BORING -17.6' MLLW 6. THICKNESS OF OVERBURDEN 37.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 David Belville, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -17.6= 0': CLAYEY SILTY SAND (SM), fine; dark gray, with USCS 0 1 shell fragments. 2 15 <u>-20.6</u>≢ 3.0 3': CLAYEY SAND (SC), fine to medium; with shell 3 12 -22.0 + 4.4 4.4': SILTY SAND (SM), fine; dark gray, with shell 4 20 fragments. 5 4 -25.0= 7.4 7.4': SILT (MH), high plasticity; dark green, high 6 15 plasticity, with shell fragments **-26.5 ±** 8.9 8.9': CLAYEY SAND (SC), fine; dark gray and 7 12 8 5 10.9': Shell fragments. -30.0 = 12.4 9 6 12.4': Core loss. -31.5 

13.9 7 10 13.9': CLAYEY SAND (SC), fine; dark green. 8 11 12 3 13 3 7 14 15 8 16 6 -41.6<sup>∓</sup> 24.0 24': SANDY SILT (ML), low plasticity; fine; dark 17 8 green, low plasticity. 25.5': SANDY SILT, low plasticity; fine; olive green, 18 16 low plasticity. 27': SANDY SILT, low plasticity; fine; dark green, 2 19 low plasticity. 20 5 21 4 -49.1 31.5 31.5': SANDY SILT (MH), high plasticity; fine; dark 22 11 gray, high plasticity. 23 15 24 12 25 10 -55.1 = 37.5 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-70-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL State Plane - South Carolina NAD83 MLLW Charleston Harbor Entrance Channel Deepening 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 330563.1198 E 2355686.837 EC-70-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 12/11/89 INCLINED 12/11/89 16. ELEVATION TOP OF BORING -29.5' MLLW 6. THICKNESS OF OVERBURDEN 25.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 55' 8. TOTAL DEPTH OF BORING David Belville, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS LEGEN **DEPTH** Samp **ELEV** REMARKS RQD % REC (Description) -29.5 0': SILT (MH), high plasticity; dark green, high USCS 1 0 plasticity, with shell fragments. -31.0 1.5 1.5': CLAYEY SAND (SC), medium; gray, with shell 2 6 -32.5 🛨 3.0 3': CLAY (MH), high plasticity; gray, high plasticity, 3 0 with shell fragments. 4 0 -35.5 6.0 6': CLAYEY SAND (SC), fine; dark green, with shell 5 fragments. 1 6 4 7 4 -40.0 = 10.5 10.5': SANDY SILT (MH), high plasticity; fine; dark 8 green to olive green, high plasticity. 5 9 12.5': SILT, high plasticity; olive green, high 4 plasticity, with cemented nodules. 10 6 11 19 16.5': SANDY SILT, fine; dark green, with 12 18 cemented nodules. 13 4 14 5 15 14 22.5': SILT, high plasticity; dark green, high 16 11 plasticity. 17 8 <u>-55.0</u>  $\pm$  25.5 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-71-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5-1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 330632.5813 E 2358043.8347 EC-71-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 27 27 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 12/7/89 12/7/89 INCLINED 16. ELEVATION TOP OF BORING -15.7' MLLW 6. THICKNESS OF OVERBURDEN 40.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.2 David Belville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp RQD % REMARKS REC (Description) -15.7= 0': SILTY SAND (SM), fine; dark green, some shell USCSSet 6" casing to bottom of 12 1 channel. Mixed Zeogel mud. fragments, fine-medium sized shell. 2 9 3 8 4 6 5 21 6 12 <u>-24</u>.7∄ 9.0 9': SANDY LEAN SILT (ML), fine; dark green, some 7 15 shell fragments, fine-medium shell. 8 2 9 9 NOTE: Weight of rods and hammer 13.5': SANDY LEAN SILT, fine; dark green, with 10 0 shell fragments, 20-30% medim shell. (140lb) drove splitspoon from 29.2' to 30.7' and 50.2' to 51.7'. 11 8 -32.2= 16.5 16.5': SANDY ELASTIC SILT (MH), dark green, 12 12 some silt strata or lenses, and shell fragments, light gray ML silt interbedded with shell. 13 6 14 12 7 21 15 11 24': CLAYEY SAND (SC), fine; dark green. 22 12 16 7 23 9 4 17 24 0 31.5': Fine; fine grained sand to silt-sized particles. 18 5 25 11 19 5 4 26 -53.2 37.5 37.5': ELASTIC SILT (MH), olive green. 20 9 27 15 <u>-56.2</u> 40.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -56.2 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-72-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL EC-72-89 N 328932.7184 E 2358643.174 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 16 0 16 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/5/89 12/5/89 INCLINED 16. ELEVATION TOP OF BORING -31.6' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 David Belville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -31.6 0': CLAYEY SAND (SC), fine to medium; dark gray, USCS 1 6 with shell fragments.  $-33.0 \pm 1.4$ 1.4': SANDY SILT (MH), high plasticity; fine; dark green, high plasticity, with shell fragments. 2 3 9 3 4.4': Very fine, sandy. 4 10 5 14 6 6 7 3 8 6  $-43.6 \pm 12.0$ 12': CLAYEY SAND (SC), fine; dark green. 9 2 10 8  $-46.6 \pm 15.0$ 15': SANDY SILT (MH), high plasticity; fine; dark 7 11 gray, high plasticity. 16.4': Lenses of mo. cemented silt, nodules of 1/2" 12 13 18': SILT, high plasticity; dark green, high plasticity. 13 13 -51.1 = 19.5 19.5': SILT (ML), low plasticity; dark green, low 14 2 plasticity. 15 6 16 3  $-55.6 \pm 24.0$ BOTTOM OF BOREHOLE AT -55.6 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-73-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-73-89 N 329766.8881 E 2359549.014 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 23 23 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/4/89 12/4/89 INCLINED 16. ELEVATION TOP OF BORING -21' MLLW 6. THICKNESS OF OVERBURDEN 34.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 David Belville, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -21 0': SILTY SAND (SM), fine to medium; gray, with USCS 1 26 shell fragments. 2 6 -24.0 = 3.0 3': CLAYEY SAND (SC), fine to medium; with shell 3 12 fragments. 4 13 <u>-27.0≢ 6.0</u> 6': SILT (MH), high plasticity; dark gray, high 5 10 plasticity, with shell fragments. 7.5 -28.5 7.5': CLAYEY SAND (SC), fine to medium; with 6 0 *-*30.0 ≢ 9.0 shell fragments. 9': SILT (ML), low plasticity; dark green, low 7 9 -31.5 10.5 10.5': SANDY SILT (MH), high plasticity; fine; dark 8 10 green, high plasticity. 9 11 10 9 11 11 12 14 13 12 14 8 15 6 5 16 7 17 18 8 19 8 20 26 21 8 -52.5 31.5 31.5': SANDY SILT (ML), low plasticity; fine; olive 22 10 green, low plasticity. 23 8 -55.5 = 34.5 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-74-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-74-89 N 327955.0819 E 2360430.379 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 12/2/89 12/2/89 INCLINED 16. ELEVATION TOP OF BORING -29.5' MLLW 6. THICKNESS OF OVERBURDEN 25.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' David Belville, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) 0': SILTY SAND (SM), fine to medium; dark gray, -29.5 USCS 1 10 with shell fragments. -31.0 1.5 1.5': Core loss. 7 2 -32.5 3.0 3': SANDY SILT (MH), high plasticity; fine; dark 3 8 green, high plasticity, with shell fragments. -34.0 4.5 4.5': CLAYEY SAND (SC), fine; dark green. 4 15 -35.5 ‡ 6.0 6': SANDY SILT (MH), high plasticity; fine; dark 5 10 green, high plasticity. 6 12 7 9 8 8 9 10 7 10 11 5  $-46.0 \pm 16.5$ 16.5': CLAYEY SAND (SC), fine; dark green. 12 5 13 4 14 7 15 8 7 16  $-53.5 \mp 24.0$ 24': SILT (MH), high plasticity; olive green, high 17 32 plasticity, nodules of 1/2" diameter. -55.0±25.5 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-75-89 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 328378.3924 E 2362016.304 EC-75-89 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/2/89 12/2/89 16. ELEVATION TOP OF BORING -30.1' MLLW 6. THICKNESS OF OVERBURDEN 25.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 David Belville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -30.1 0': CLAYEY SAND (SM), fine to coarse; gray, with USCS shell fragments, cemented sandy nodules up to 1/2" 1 24 2 28 3 27 36 4 5 30 6 25 7 17 8 4 **-42.0**  $\pm$  **11.9** 11.9': SANDY SILT, high plasticity; fine; dark green, high plasticity. 9 35 -44.0 13.9 13.9': CLAYEY SAND (SC), fine; dark green. 10 14 11 16 12 8 7 13 14 8 7 15 16 9 17 8 <u>-55.7 $\overline{\mp}$ 25.</u>6 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.7 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-75A-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-75A-90 N 328390.3915 E 2362012.301 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 5 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ✓ VERTICAL VERTICAL 15. DATE BORING 5/31/90 5/31/90 INCLINED 16. ELEVATION TOP OF BORING -30.1' MLLW 3' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 17.1 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.2 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV DEPTH Samp REMARKS RQD % REC (Description) -30.1 0': SILTY SAND (SM), fine to medium; dark gray USCS 5 1 and brown, wet, some shell fragments, trace clay, Zeogel drilling mud used slightly calcareous. 1.5': Light gray, some limestone fragments, and Pull #1 2 From 33.1' to 34.5' 21 shell fragments. -33.1 3.0 Run 1.4' Rec 1.4' 3': Limestone Taped 34.5' Box 100 Drilling Time: 2 Min. 1 Hyd. Pressure: 100 PSI Water Return: 100% From 34.5' to 39.0' Box 24 Run 4.5' Rec 1.1' C.L. 3.4' Taped 30.9'  $-37.1 \mp 7.0$ 7': SILTY SAND (SM), fine to medium; gray, moist, -38.0 7.9 some shell fragments, calcareous, dense, stiff. Drilling Time: 7 Min. Hyd. Pressure: 100 PSI 7.9': Core loss. Water Return: 100% Box 0 NOTE: Recovered 2.3' of core loss -39.9  $\mp$ 9.8 during Pull #3 9.8': Limestone -40.5 10.4 Pull #3 10.4': SILTY SAND (SM), fine to medium; gray, Box From 39.0' to 39.9' -41.5 + 11.4 59 moist, some shell fragments, calcareous, dense, Run 0.9' Rec 2.3' C.G. 1.4' Taped 35.3' mod. stiff. 11.4': Core loss. Blocked at 39.9' Drilling Time: 3 Min. Hyd. Pressure: 100 PSI Box Water Return: 100% 0 NOTE: Core recovery of 2.3' probably core left in hole from Pull #2  $-45.7 \pm 15.6$ Pull #4 15.6': CLAYEY SAND (SC), fine; olive green. From 39.9' to 42.6' 3 12 Run 2.7' Rec 1.6' C.L. 1.1' Taped 42.6' Blocked at 42.6' 4 6 Drilling Time: 7 Min. Hyd. Pressure: 120 PSI 18.6': SAND, fine to medium; dark brown to Water Return: 100% 5 5 greenish brown. Pull #5 -50.2<u>丰</u>20.1 From 42.6' to 45.7' BOTTOM OF BOREHOLE AT -50.2 ft Run 3.1' Rec 0.0' C.L. 3.1' Taped 34.5' NOTE: Soils visually field classified in accordance Drilling Time: 2 Min. with the Unified Soil Classification System Hyd. Pressure: 150 PSI Water Return: 100% BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-76-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-76-89 N 327103.4042 E 2362010.559 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 16 0 16 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/1/89 12/1/89 16. ELEVATION TOP OF BORING -31.1' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING David Belville 55.1 N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -31.1 0': CLAYEY SAND (SC), fine to medium; dark USCS 1 15 green, with shell fragments. 2 11 -34.0<u>±</u> 2.9 2.9': SILTY SAND (SM), fine to medium; gray, with 3 shell fragments, calcareous. 24 4.5': Cemented sand nodules up to 3/4" diameter. 4 30 5 17 6 12 7 14 16 8 10.9': Cemented sand nodules up to 3/4" diameter, slightly clayey. 9 8 10 12 11 15 12 11 13 13 17 14 -52.0  $\pm$  20.9 20.9': CLAYEY SAND (SC), fine; dark green, 15 12 calcareous. <u>-53.5 <del>+</del></u> 22.4 22.4': SANDY SILT (ML), low plasticity; fine; dark green, low plasticity. 16 9  $-55.1 \pm 24.0$ BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-77-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-77-90 N 327686.6546 E 2363295.45 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 0 15 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/28/90 1/28/90 INCLINED 16. ELEVATION TOP OF BORING -33' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -33 0': SILTY SAND (SM), fine to medium; gray to USCS tannish green, wet, some shell fragments, 1 22 calcareous. 1.5': (1.5), gray, trace shell fragments. 2 31 3': With shell fragments. 3 15 4.5': SILTY SAND, fine to medium; greenish gray, some shell fragments. 8 4 6.0 6': CLAY (CH), high plasticity; dark greenish brown, moist, high plasticity, some sand, slightly calcareous. 5 15 6 15 7 10 8 11 9 11 10 11 10 11 -49.5 = 16.5 16.5': CLAYEY SAND (SC), fine to medium; dark greenish brown, moist. 12 4 13 4 14 5 21': Partially indurated & several coarse size gravel particles at 55.0'. 15 9 <u>-55.5 ±</u> 22.5 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-78-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-78-90 N 326075.7859 E 2363874.777 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 0 15 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/1/90 2/1/90 INCLINED 16. ELEVATION TOP OF BORING -32.6' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1 James Arthur, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -32.6 0': SILTY SAND (SM), fine to medium; gray and USCS light gray, wet, some limestone fragments, and shell 1 19 fragments, calcareous. NOTE: Suspect thin limestone layers from 32.6' to 47.6'. 1.5': SILTY SAND, fine to medium; light gray, calcareous. 2 40 3': Gray, trace limestone fragments. 3 36 32 4 6': No gravel. 5 22 7.5': Trace limestone fragments. 6 20 9': Trace clay. 7 15 8 14 12': Trace shell fragments, no limestone fragments. 9 13 13.5': Some shell fragments, trace limestone fragments, trace clay. 10 14 -47.6 = 15.0 15': CLAYEY SAND (SC), fine to medium; greenish gray, wet, trace shell fragments. 7 11 12 9 18': CLAYEY SAND, fine; dark greenish brown, 13 11 8 14 15 5 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

SAW FORM 1836-A

**Boring Designation** EC-78A-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-78A-90 N 326074.7863 E 2363876.778 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 2 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/21/90 5/21/90 INCLINED 16. ELEVATION TOP OF BORING -28.4' MLLW 6. THICKNESS OF OVERBURDEN 4.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 17.5 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -28.4-0': SILTY SAND (SM), fine to medium; gray, wet, USCS 0 with shell fragments, calcareous. 4 1 16 8 3': Light gray to gray, trace shell fragments, and limestone fragments. 2 59 -32.9 4.5 4.5': Limestone Top of Rock Pull #1 Box 100 From 32.9' to 35.0' Run 2.1' Rec 2.1 Drilling Time: 16 Min. 6.6': Light gray to gray. Hyd Pressure: 100 PSI Water Return: 100% Taped 35.0' Pull #2 From 35.0' to 39.4' Box 64 Run 4.4' Rec 2.8' C.L. 1.6' Taped 38.5' Drilling Time: 17 Min. Hyd. Pressure: 150 PSI Water Return: 100% -39.4<u>‡</u>11.0 11': CLAYEY SAND (SC), fine to medium; gray to Pull #3 From 39.4' to 44.6' Run 5.2' Rec 3.3' C.L. 1.9' Taped 39.5' greenish gray, wet, trace shell fragments, calcareous, medium stiff & dense. Drilling Time: 16 Min. Hyd. Pressure: 150 PSI Box 63 Water Return: 100% Pull #4 From 44.6' to 48.9' Run 4.3' Rec 2.5' C.L. 1.8' Taped 48.7' Drilling Time: 14 Min. Box 58 Hyd. Pressure: 150 PSI 2 Watern Return: 100% 3 10  $-50.4 \pm 22.0$ BOTTOM OF BOREHOLE AT -50.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-79-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-79-90 N 326926.9302 E 2364635.612 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/28/90 1/28/90 -31.7' MLLW 16. ELEVATION TOP OF BORING 6' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 37.7' James Arthur, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-31.7 <sub>-</sub>	-		0': SILTY SAND (SM), fine to medium; brown and light gray, wet, calcareous.		1	-	USCS  NOTE: Boring terminated at 37.7' due to strong currents causing casing to lean too much.		0
-	-		1.5': Light gray.		2				16
- - - - -					3				15
-37.7	6.0				4				16

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BOTTOM OF BOREHOLE AT -37.7 ft

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-79A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-79A-90 N 326920.9325 E 2364646.613 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 15 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/29/90 1/29/90 16. ELEVATION TOP OF BORING -32.4' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.9 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -32.4-0': SILTY SAND (SM), fine to medium; gray to light USCS gray, wet, trace shell fragments. 1 17 1.5': Light gray. 2 23 3 19 13 4 5 8  $-39.9 \pm$ 7.5 7.5': CLAY (CH), high plasticity; fine; dark greenish brown, moist, high plasticity, some sand, slightly 6 29 calcareous. 7 16 8 13 9 17  $-45.9 \pm 13.5$ 13.5': CLAYEY SAND (SC), fine to medium; dark greenish brown, moist. 10 7 12 11 12 9 13 9 5 14 15 3 -54.9  $\pm$  22.5 BOTTOM OF BOREHOLE AT -54.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-80-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-80-90 N 326191.1768 E 2365828.768 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/15/90 5/15/90 INCLINED 16. ELEVATION TOP OF BORING -30.5' MLLW 6. THICKNESS OF OVERBURDEN 24.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55' James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -30.5 0': SILTY SAND (SM), fine to medium; gray and USCS 1 16 light gray, wet, with shell fragments, calcareous. 1.5': Light gray, trace shell fragments. 2 36 3': Trace limestone fragments. NOTE: Limestone gravel at 33.5' 3 32 appears to be from occasional nodules rather than layers. 4.5': Gray. 4 37 5 27 6 12 9': Some shell fragments, trace clay. 7 6  $-40.5 \pm 10.0$ 10': CLAYEY SAND (SC), fine to medium; olive 8 green, wet, trace shell fragments, slightly calcareous. 9 15 -42.5 <del>+</del> <u>12.0</u> 12': CLAY (CL), low plasticity; olive green to grayish 10 brown, moist, low plasticity, some fine sand, slightly 15 calcareous. 11 11 12 8  $-47.0 \pm 16.5$ 16.5': CLAYEY SAND (SC), fine; olive green to 13 9 grayish brown, moist, slightly calcareous. 14 11 15 9 16 9 17 9 -55.0 = 24.5 BOTTOM OF BOREHOLE AT -55.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-81-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail : LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL EC-81-90 N 325189.153 E 2365665.969 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 15 0 15 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/15/90 5/15/90 16. ELEVATION TOP OF BORING -34.5' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.5 0': SILTY SAND (SM), fine to medium; gray, wet, USCS trace shell fragments, calcareous. 1 20 Made new batch of Zeogel mud at 36.0' 2 27 3': Trace shell fragments. 3 20 4.5': No large shell fragments. 15 4 6': Trace shell fragments. 5 9 7.5': With shell fragments, trace clay. 6 4 -43.2 8.7 7 8.7': CLAYEY SAND (SC), fine; olive green to grayish brown, dry, slightly calcareous. 8 18 10.5': Moist. 9 11 10 13 10 11 12 11 13 9 14 8 15 6 -55.5 🕇 21.0 BOTTOM OF BOREHOLE AT -55.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** EC-82-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-82-90 N 325399.4871 E 2367332.939 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 17 17 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/14/90 5/14/90 INCLINED 16. ELEVATION TOP OF BORING -31.4' MLLW 6. THICKNESS OF OVERBURDEN 24' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 Toni Nicholson, P.G. N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -31.4 0': CLAYEY SILTY SAND (SM), fine; dark gray, USCS 7 1 saturated, with shell fragments. -32.9 1.5 Mixed Zeogel drilling mud. 1.5': SAND (SP), fine to medium; light gray, Poorly 2 Graded, wet, with shell fragments, very calcareous, 32  $-34.4 \pm 3.0$ with hard zones 3': SILTY SAND (SM), fine to medium; light gray to 3 31 gray, wet, trace shell fragments, very calcareous, with hard zones LAB CLASSIFICATION 4.5': Fine; more silt. 4 Sample No. 4 - SM 34 Specific Gravity - 2.70 6': Fine; gray, more calcareous. 5 25 6 16 7 13 10.5': Fine; greenish gray, with shell fragments. 8 3 -42.9 11.5 11.5': SILT (ML), low plasticity; dark olive green, 9 moist, low plasticity, trace shell fragments, 10 calcareous, glauconitic, slightly sandy. 11 12': Less sandy. 11 13 12 15 13 14 14 11 15 12 16 9 17 9  $-55.4 \pm 24.0$ BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-82A-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-82A-90 N 325402.4842 E 2367318.939 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/1/90 6/1/90 INCLINED 16. ELEVATION TOP OF BORING -33.5' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -33.5\_ 0': SILTY SAND (SM), medium to coarse; light gray, USCS wet, some shell fragments, and limestone fragments, 1 26 calcareous. 1.5': Gray, trace shell fragments, and limestone New batch of Zeogel mud at 35.0'. fragments. 2 15 3': SAND, fine to medium; trace shell fragments, and limestone fragments. 3 25 4 20 6': Trace limestone fragments, no shell fragments. 5 17 7.5': Light gray, with shell fragments, some limestone fragments. 6 7 -42.5 9.0 9': CLAYEY SAND (SC), fine; dark greenish brown, moist, non-calcareous. 7 4 8 17 9 14 10 9 11 12 <u>-50.0 ‡ 16.5</u> BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.0 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-83-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-83-90 N 323751.6809 E 2368223.281 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 14 14 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/11/90 5/11/90 INCLINED 16. ELEVATION TOP OF BORING -35' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.5 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': CLAYEY SILTY SAND (SM), fine; gray, wet, -35 USCS some shell fragments, calcareous. 1 9 Mixed Zeogel drilling mud -36.5 1.5 LAB CLASSIFICATION 1.5': No recovery Sample No. 2 - SM 2 25 Specific Gravity - 2.71 -38.0‡ 3.0 3': CLAYEY SILTY SAND (SM), fine; greenish gray, with shell fragments, glauconitic. 3 52 18 4 5 16 6 13 7 8 8 5 -46.5<sup>±</sup> 11.5 11.5': SILT (ML), low plasticity; dark olive green, 9 moist, low plasticity, trace sand. 12': Small phosphate nodules.. 10 10 18 11 15': Very little sand, no phosphate nodules. 15 12 13 14 13 14 <u>-54.5</u> 19.5 BOTTOM OF BOREHOLE AT -54.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-83A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-83A-90 N 323746.6828 E 2368232.282 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/20/90 5/20/90 16. ELEVATION TOP OF BORING -34.5' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.5 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -34.5\_ 0': SILTY SAND (SM), gray, wet, some shell USCS fragments, calcareous. 1 18 Made new batch of Zeogel mud. 1.5': Trace shell fragments. 2 24 3': Grey to greenish green, some shell fragments, trace clay. 3 16 4.5': Trace limestone fragments. 4 16 6': No limestone fragments. 5 14 6 11 7 9  $-45.0 \pm 10.5$ 10.5': CLAYEY SAND (SC), light grayish green, wet, with shell fragments, calcareous. 8 7  $-46.0 \pm 11.5$ 11.5': CLAY (CH), high plasticity; dark greenish 9 brown, moist, high plasticity, some sand, slightly calcareous. 10 14 13.5': Trace sand. 23 11 -49.5 <del>+</del> 15.0 BOTTOM OF BOREHOLE AT -49.5 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-84-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-84-90 N 324559.8071 E 2368878.122 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 16 16 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/7/90 5/7/90 INCLINED 16. ELEVATION TOP OF BORING -33' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5 Toni Nicholson, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -33 0': SILTY SAND (SM), fine; dark gray, wet, some USCS shell fragments, calcareous. 1 24 1.5': With limestone fragments. LAB CLASSIFICATION 2 44 Sample No. 2 - SM Specific Gravity - 2.71 3': Fine; gray. 3 40 32 4 6': Slightly clayey, trace shell fragments. 5 24 6 19 7 8 11 -45.0 <u>± 12.0</u>  $-45.5 \pm 12.5$ 12': CLAYEY SAND (SC), fine; gray, with shell 9 fragments, calcareous. 10 3 12.5': SILT (ML), low plasticity; dark olive green, low plasticity, trace shell fragments, calcareous. 14 11 19 12 13 14 14 15 12 15 16 11 <u>-55.5 ±</u> 22.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.5 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-84A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-84A-90 N 324558.8053 E 2368869.122 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 5 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 5/31/90 5/31/90 INCLINED 16. ELEVATION TOP OF BORING -33.1' MLLW 3' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING 82% 7. DEPTH DRILLED INTO ROCK 13.6 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -33.1-0': SILTY SAND (SM), fine to medium; brown and USCS light tannish gray, wet, trace shell fragments, and 1 Made new batch of Zeogel mud. 18 limestone fragments, calcareous. 1.5': SILTY SAND, medium to coarse; gray, trace limestone fragments, and shell fragments. 2 24 -36.1 干 3.0 3': CLAYEY SANDY, gray, soft to mod. hard, Pull #1 From 36.1' to 37.8' friable, badly broken. Run 1.7' Rec 1.4' C.L. 0.3' Taped 37.8' Drilling Time: 10 Min. Hyd. Pressure: 100 PSI Water Return: 100 % Pull #2 From 37.8' to 42.3' Run 4.5' Rec 4.5' Taped 35.6' Drilling Time: 8 Min. Hyd. Pressure: 50 PSI Water Return: 100% -42.3<del>-</del> 9.2 Pull #3 9.2': No recovery From 42.3' to 46.7' Run 4.4' Rec 0.0' Box C.L. 4.4' Taped 36.8' Drilling Time: 2 Min. Hvd. Pressure: 50 PSI Water Return: 100% -46.7‡13.6 13.6': CLAY (CL), low plasticity; olive green, moist, low plasticity, with sand, slightly calcareous. 3 15 16 4 <u>-49.7‡1</u>6.6 BOTTOM OF BOREHOLE AT -49.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-85-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES EC-85-89 N 303506.0959 E 2407498.328 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 10 1 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/12/90 12/12/90 16. ELEVATION TOP OF BORING -40.1' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' David Bellville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.1\_ USCS 0': SILTY SAND (SM), fine; gray, trace shell fragments. 1 64 2 38 3 30 7.5 -47.6 4 7.5': SAND (SP), light gray, with some clay, 34 Cemented calcareous rock fragments.. 5 30 6 74 7 66 -55.1  $\pm$  15.0 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System 8 54

**Boring Designation** EC-85-89 INSTALLATION SHEET **DRILLING LOG (Cont Sheet)** Charleston Harbor OF 2 SHEETS COORDINATE SYSTEM VERTICAL HORIZONTAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 MLLW LOCATION COORDINATES **ELEVATION TOP OF BORING** N 303506.0959 E 2407498.328 -40.1' N-Value FIELD CLASSIFICATION OF MATERIALS % REC ELEV DEPTH REMARKS RQD % (Description) 63 9 10 43

**Boring Designation** EC-85A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-85A-90 N 305188.9015 E 2402104.81 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 8 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/30/90 5/30/90 INCLINED 16. ELEVATION TOP OF BORING -38.8' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.8 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.8\_ 0': SAND (SP), fine to medium; brown, wet, some USCS shell fragments, trace silt, Calcareous. 1 1 1.5': Gray and brown, trace shell fragments. -41.8 3.0 2 100 3': SILTY SAND (SM), fine to medium; gray, wet, trace shell fragments, Slightly Calcareous. 3 40 -44.8 6.0 6': SAND (SP), fine; gray, wet, trace silt, and shell fragments, Slightly Calcareous. 4 7.5': SAND, fine to medium. 38 -47.8 9.0 9': SILTY SAND (SM), medium to coarse; light gray and tan, wet, trace gravel, and shell fragments, 5 40 Calcareous. -50.8 <del>+</del> 12.0 6 45 BOTTOM OF BOREHOLE AT -50.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System 7 61 8 78

		Boring	Designation	EC-85A-90	
DRILLING LOG	G (Cont Sheet)	INSTALLATION Charleston Harbor		SHEET 2 OF 2 SHEET	
PROJECT	<del>-</del>	COORDINATE SYSTEM	HORIZONTAL	VERTICAL	
	or Entrance Channel Deepening	State Plane	NAD83	MLLW	
OCATION COORDINA	TES	ELEVATION TOP OF BORING		•	
N 305188.9015	E 2402104.81	-38.8'			
ELEA DELLA CATA	FIELD CLASSIFICATION OF MATERIALS (Description)	SS S S S S S S S S S S S S S S S S S S	REMARKS	Blows/ 0.5 ft	
				_	
				_	

**Boring Designation** EC-86-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 304470.7151 E 2405781.066 EC-86-89 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/13/89 12/13/89 16. ELEVATION TOP OF BORING -40.1' MLLW 6. THICKNESS OF OVERBURDEN 10.1 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 4.9 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.1' David Bellville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.1\_ 0': SILTY SAND (SM), fine to medium; dark green, USCS with shell fragments. 1 9 2 40 3': Gray. 3 36 6': Greenish gray. 7.<u>5</u> -47.6 4 7.5': SAND (SP), fine to coarse; light gray, with rock 43 fragments. 9': Dark gray, Top of rock.. 5 72  $-50.2 \pm 10.1$ 10.1': SANDY, fine to coarse; dark gray, with shell fragments. 7 100 100 8 <u>-55.1 +</u> 15.0 BOTTOM OF BOREHOLE AT -55.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System Box

ADILLING LOG (O	4 Ch a a 4)	INSTALLATION	Designation	EC-86-89 SHEET 2	_
RILLING LOG (Cont	t Sneet)	Charleston Harbor		OF 2 SHEE	ΕT
ROJECT		COORDINATE SYSTEM	HORIZONTAL	VERTICAL	
	ance Channel Deepening	State Plane	NAD83	MLLW	
OCATION COORDINATES		ELEVATION TOP OF BORING	•	•	
N 304470.7151 E 2405	5781.066	-40.1'			
LEV DEPTH 9	FIELD CLASSIFICATION OF MATERIALS (Description)	Samp N RD N % N O	REMARKS	Blows/ 0.5 ft	N-Value
				_	_
				_	_

**Boring Designation** EC-87-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-87-89 N 304085.3406 E 2404101.108 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/15/89 12/15/89 16. ELEVATION TOP OF BORING -41.3' MLLW 7.2' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 6.3 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.8 David Bellville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.3\_ 0': SILTY SAND (SM), fine; dark gray, with shell USCS fragments. 1 53 2 38 3 35 -47.3 6.0 6': CLAYEY SAND (SP), fine to coarse; gray, and -48.5<sup>--</sup> 7.2 7.2': SANDY GRAVEL, fine to coarse; gray, with 4 shell fragments. 24 5 100 -54.8 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.8 ft Box to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-87-89

DDILLING LOC (Cont Choot)	INSTALLATION		SHEET 2	
DRILLING LOG (Cont Sheet)	Charleston Harbor		of 2 SHEETS	
PROJECT	COORDINATE SYSTEM	VERTICAL		
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW	
LOCATION COORDINATES	ELEVATION TOP OF BORING	•	•	
N 304085.3406 E 2404101.108	-41.3'			
ELEV DEPTH US FIELD CLASSIFICATION OF MATERIALS (Description)	Samp N * COD %	REMARKS	Blows/ 0.5 ft N-Value	

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**Boring Designation** EC-87A-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-87A-90 N 304078.3433 E 2404113.109 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 1 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 6/3/90 6/3/90 16. ELEVATION TOP OF BORING -40.5' MLLW 6. THICKNESS OF OVERBURDEN 7.5' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 2.4' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -40.5\_ 0': SAND (SP), fine to medium; gray, wet, trace USCS shell fragments, and silt, Slightly calcareous... 1 8 2 103 4.5': Calcareous. 3 32 -46.5 6.0 6': SAND (SM), medium to coarse; green, wet, with silt, trace gravel, and shell fragments. -48.0 7.5 4 7.5': GRAVELLY, hard; tannish gray, Fossiliferous, 24 porous, large amount of small to large vugs intensely to highly jointed w/ low open joints at 48.8', 48.8', 48.9', 49.1', 49.3', 49.5', & 49.9'.. 5 94  $-50.4 \pm 9.9$ BOTTOM OF BOREHOLE AT -50.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". 6 with the Unified Soil Classification System Box 1

**Boring Designation** EC-88-89 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-88-89 N 305365.338 E 2404075.822 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 12/15/89 12/15/89 16. ELEVATION TOP OF BORING -40.4' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 David Belville, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.4\_ 0': SILTY SAND (SM), fine; dark gray. USCS 1 0 1.5': Some shell fragments. 2 10 3 33 4 30 5 26 6 24 -49.4 9.0 9': SAND (SP), light gray, Poorly Graded, and gravel, with clay, and shell fragments, Calcareous. **9.5':** Rock fragments, (Limestone). 7 27 8 48 34 9 64 10 -55.4<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-89-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2 " Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-89-90 N 305174.905 E 2402120.813 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/24/90 1/24/90 INCLINED 16. ELEVATION TOP OF BORING -41.9' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 David Belville, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.9\_ 0': SAND (SP), fine to medium; greenish gray, USCS Poorly Graded, wet, some shell fragments, trace silt, 1 12 Slightly Calcareous. 1.5': Gray. 2 74 -44.9 3.0 3': SILTY SAND (SM), gray, wet, some shell Set 6" casing by own weight to 42.7'. NOTE: Suspect thin limestone layers fragments, Calcareous. 3 40 from 47.9' to 55.4'. 4.5': SAND, fine; trace shell fragments. 4 23 6': SAND, medium to coarse; gray to light gray, trace gravel, (Limestone). 5 42 7.5': No Gravel. 6 74 9': Trace gravel, (Limestone). 7 56 8 50 12': Dark gray. 9 58 -55.4 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.4 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-89A-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-89A-90 N 305188.9015 E 2402104.81 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/2/90 6/2/90 16. ELEVATION TOP OF BORING -40.8' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 49.8 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.8\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace silt, and shell fragments, Slightly 1 26 Calcareous. 2 34 Made new batch of Zeogel mud at 42.3' 3 36 4 28 6': SAND, medium to coarse; some gravel, trace 5 -47.3 丰 6.5 shell fragments. 6.5': SAND (SM), medium to coarse; light gray and 6 61 gray, some shell fragments, trace gravel, Calcareous 7.5': Light gray, some gravel, (Limestone). 7 55 -49.8  $\pm$ 9.0 BOTTOM OF BOREHOLE AT -49.8 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-90-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-90-90 N 306214.9919 E 2402505.593 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 0 11 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL COMPLETED VERTICAL 15. DATE BORING 1/24/90 1/24/90 INCLINED 16. ELEVATION TOP OF BORING -39.2' MLLW 6. THICKNESS OF OVERBURDEN 16.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.2\_ 0': SAND (SP), fine to medium; greenish gray, USCS Poorly Graded, wet, some shell fragments, trace silt, 1 23 Slightly Calcareous. 1.5': Gray. Set 6: casing by own weight to 40.1'. Weight of rods drove splitspoon to 39.5', 2 70 cont'd drive to 40.7'. 3': SAND, fine; trace shell fragments. 3 25 -43.7 4.5 4.5': SILTY SAND (SM), fine to medium; gray, wet, trace shell fragments. 4 30 5 42 7.5 -46.7 7.5': SAND (SP), fine; green, Poorly Graded, wet, trace silt. Calcareous. 6 49 -48.2 9.0 9': SILTY SAND (SM), fine to medium; gray to dark gray, wet, trace shell fragments, Calcareous. 7 16 10.5': SAND, medium to coarse; with shell fragments. 8 20 12': Light gray, some fine to coarse gravel, trace 9 76 13.5': Trace gravel, (Limestone). 10 62 11 59 <u>-55.7 ∓ 16.5</u> BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.7 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-90A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 306230.9913 E 2402502.589 EC-90A-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/24/90 5/24/90 INCLINED 16. ELEVATION TOP OF BORING -38' MLLW 12' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38 0': SAND (SP), fine to medium; greenish gray, USCS Poorly Graded, wet, some shell fragments, trace silt, 1 39 Slightly Calcareous. Set 6" casing by own weight to 39.2'. 2 40 3': SAND, fine; trace shell fragments, Calcareous. Made new batch of Zeogel mud at 39.5' 3 17 4.5': SAND, fine to medium; gray to greenish gray, some shell fragments. 4 26 6': SAND, fine. 43 5 6 35 9': SAND, fine to medium; trace shell fragments. 7 19 -48.5 ‡ 10.5 8 -48.7 \ 10.7 10.5': CLAY (CH), high plasticity; green, damp, high plasticity. 10.7': SAND (SP), medium to coarse; gray to dark 9 20 gray, Poorly Graded, wet, with shell fragments, trace -50.0 <del>+</del> 12.0 silt, Calcareous. BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -50.0 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-91-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 305694.7252 E 2401300.677 EC-91-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/27/90 1/27/90 INCLINED 16. ELEVATION TOP OF BORING -41.8' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.8\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace shell fragments, and silt, Slightly 1 6 Calcareous. Set 6" casing by own weight to 43.6'. 2 72 3': Trace shell fragments. NOTE: Suspect thin limestone layers from 46.3' to 55.3'. 3 30 -46.3 4.5 4.5': SILTY SAND (SM), fine to medium; gray, wet, some shell fragments, trace gravel, Calcareous 74 4 (Limesonte). 6': SAND, medium to coarse; light gray, trace shell fragments. 5 52 6 38 7 46 8 30 12': 9 62 -55.3 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.3 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-91A-90 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-91A-90 N 305694.7252 E 2401300.677 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 5 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 5/30/90 5/30/90 INCLINED 16. ELEVATION TOP OF BORING -40.7' MLLW 6. THICKNESS OF OVERBURDEN 9.7 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.7\_ 0': SAND (SP), fine; gray, Poorly Graded, wet, trace USCS shell fragments, and silt, Slightly Calcareous. 1 1 Weight of rods drove splitspoon to 41.2', cont'd drive to 42.2' w/ one hammer 2 15 blow. No recovery on initial drive to 42.2'. Re-drove to 42.2' then cont'd drive to 43.7' w/ five blows from 42.2' to 42.7'. Then fifteen blows to 42.7' to 43.7'. Used Zeogel mud. 3': SAND, fine to medium. 3 40 Pull #1 From 48.2' to 50.4' Run 2.2' Rec 0.0' C.L. 2.2' Taped 33.9' 4 33 Drilling Time: 5 min Hyd. Pressure: 100 psi. -46.7 6.0 6': SILTY SAND (SM), fine to medium; light gray, wet, trace gravel, Calcareous 5 72 (Limestone). 7.5 -48.2 7.5': No Recover.

BOTTOM OF BOREHOLE AT -50.4 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.4

9.7

**Boring Designation** EC-92-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-92-90 N 306829.7379 E 2401350.427 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 0 12 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/27/90 1/27/90 INCLINED 16. ELEVATION TOP OF BORING -38' MLLW 6. THICKNESS OF OVERBURDEN 18 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH Samp FI FV REMARKS RQD % REC (Description) -38 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace silt, and shell fragments, Slightly 35 1 Calcareous -39.5 1.5 1.5': SILTY SAND (SM), fine to medium; gray, wet, Set 6"casing by own weight to 38.8'. some shell fragments, Slightly Calcareous. 2 24 -41<u>.0 + 3.0</u> 3': SAND (SP), fine to medium; gray, Poorly NOTE: Suspect thin limestone layers Graded, wet, trace silt, and shell fragments, Slightly from 48.5' to 56.0'. 3 19 Calcareous. 4 27 -44.0 <del>+</del> 6.0 6': SILTY SAND (SM), fine; gray, wet, Calcareous. 5 13 7.5': SAND, fine to medium; trace shell fragments. 6 18 9': SAND, fine. 42 7 10.5': SILTY SAND, fine to medium; light gray, trace gravel, and shell fragments, Calcareous 8 36 (Limestone gravel). -50.0 + 12.012': SILTY GRAVEL, fine to coarse; light gray, wet, some sand, trace shell fragments, (Limestone 9 57 gravel). -51.5 ‡ 13.5 13.5': SILTY SAND (SM), fine to medium; light gray, trace gravel, and shell fragments, Calcareous 10 78 (Limestone gravel). 11 50 12 54  $-56.0 \pm 18.0$ BOTTOM OF BOREHOLE AT -56.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-93-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-93-90 N 306244.5039 E 2400290.53 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 10 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/8/90 2/8/90 INCLINED 16. ELEVATION TOP OF BORING -40.9' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.9 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.9\_ 0': SILTY SAND (SM), fine; gray, wet, trace shell USCS fragments, Calcareous. 1 4 Set 6" casing by own weight to 42.5'. Mixed Zeogel mud at 40.9 2 51 Weight of rods drove splitspoon from 40.9' to 41.6', cont'd drive to 42.4' NOTE: Suspect thin limestone layers from 48.4' to 55.9'. 3 22 4 38 6': SAND, fine to medium; gray and light gray, trace shell fragments. 5 45 7.5': SAND, medium to coarse; light gray, trace gravel, (Limestone). 6 51 9': Some gravel, (Fine to coarse limestone). 7 44 8 53 9 41 45 10 -55.9<sup>+</sup> 15.0 BOTTOM OF BOREHOLE AT -55.9 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-93A-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-93A-90 N 306224.5061 E 2400300.535 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/4/90 6/4/90 INCLINED 16. ELEVATION TOP OF BORING -41.5' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.5\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, with shell fragments, trace silt, 1 25 Calcareous. 1.5': Trace shell fragments. Made new batch of Zeogel mud. 2 46 Set 6" casing by own weight to 43.3'. 3 29 4 28 -47.5 6.0 6': SAND (SM), fine to medium; gray to light gray, wet, trace gravel, with clay, and shell fragments, 5 19 Calcareous (Limestone gravel). -49.0 7.5 7.5': GRAVEL (GM), fine to coarse; light gray, wet, trace clay, and shell fragments, Calcareous

6

BOTTOM OF BOREHOLE AT -50.5 ft

(Limestone gravel).

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.5

9.0

7

**Boring Designation** EC-94-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-94-90 N 307294.5316 E 2400410.301 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 2/13/90 2/13/90 16. ELEVATION TOP OF BORING -38' MLLW 6. THICKNESS OF OVERBURDEN 18' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56 James Arthur, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -38 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, and shell fragments, trace silt, 1 28 -39.5 1.5 1.5': SAND (SM), fine to medium; gray, wet, trace 6" casing by own weight to 38.3' shell fragments, Calcareous. 2 28 NOTE: Suspect thin limestone layers from 48.5' to 56.0'. 3 31 Mixed Zeogel mud at 39.5' 4 26 5 28 7.5': Trace shell fragments. 6 25 9': Gray and light gray. 7 61 10.5': SAND, medium to coarse; light gray, trace gravel, trace shell fragments, (Limestone gravel). 8 50 9 66 10 51 67 11 12 48

**Boring Designation** EC-94-90

	Borning De	signation	EC-94-90
DDILLING LOC (Cont Choot)	INSTALLATION		SHEET 2
DRILLING LOG (Cont Sheet)	Charleston Harbor		OF 2 SHEETS
PROJECT	COORDINATE SYSTEM	HORIZONTAL	VERTICAL
Charleston Harbor Entrance Channel Deepening	State Plane	NAD83	MLLW
LOCATION COORDINATES	ELEVATION TOP OF BORING	•	•
N 307294.5316 E 2400410.301	-38'		
ELEV DEPTH GUILL FIELD CLASSIFICATION OF MATERIALS (Description)	Samp No. % ROD %	REMARKS	Blows/ 0.5 ft N-Value

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** EC-95-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 306714.3202 E 2399450.405 EC-95-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 10 0 10 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/13/90 2/13/90 INCLINED 16. ELEVATION TOP OF BORING -40.7' MLLW 6. THICKNESS OF OVERBURDEN 15' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.7 James Arthur, Geologist N-Value LEGEN Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -40.7\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace silt, with shell fragments, 1 20 -42.2 1.5 1.5': SILTY SAND (SM), fine; gray, wet, trace shell Set 6" casing by own weight to 42.0'. Weight of rods drove splitspoon from fragments, Calcareous. 2 26 40.7 to 41.3, cont'd drive to 42.2. Mixed Zeogel mud at 46.7'. NOTE: Suspect thin limestone layers from 48.2' to 55.7'. 3 30 4 37 6': SAND, fine to medium; gray to light gray. 83 5 7.5': SAND, medium to coarse; light gray, trace gravel, (Limestone gravel). 6 42 -49.7 9.0 9': SILTY GRAVEL (GM), fine to coarse; light gray, some sand, trace shell fragments, Calcareous 7 48 (Limestone gravel). 8 63 -52.7 + 12.012': SILTY SAND (SM), medium to coarse; light gray, some gravel, trace shell fragments, Calcareous 9 64 (Limestone gravel). 31 10 <u>-55.7</u> ± 15.0 BOTTOM OF BOREHOLE AT -55.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** EC-96-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-96-90 N 307864.3027 E 2399365.15 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/14/90 2/14/90 INCLINED 16. ELEVATION TOP OF BORING -41.2' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 54.7 James Arthur, Geologist N-Value Blows/ 0.5 ft LEGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.2\_ 0': SAND (SP), fine to medium; gray, Poorly USCS Graded, wet, trace shell fragments, and silt, 1 12 Calcareous. Set 6" casing by own weight to 41.8'. Weight of rods drove splitspoon from 2 34 41.2' to 41.6', cont'd to 42.7'. Mixed Zeogel mud at 44.2'. NOTE: Suspect thin limestone layers 3 17 from 45.7' to 51.7'. -45.7 4.5 4.5': SILTY SAND (SM), medium to coarse; gray to light gray, with shell fragments, some gravel, 4 10 Calcareous (Limestone gravel). 6': Some gravel, (Limestone gravel). 5 5 7.5': Some shell fragments. 6 16 9': SILTY SAND, medium to coarse; light gray, wet, trace gravel, and shale fragments, Calcareous 7 23 (Limestone gravel). 10.5': No gravel. 8 66 9 91 -54.7 ‡ 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -54.7 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-97-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL EC-97-90 N 307315.0512 E 2398218.242 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ✓ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/14/90 2/14/90 INCLINED 16. ELEVATION TOP OF BORING -41.8' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.3 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.8\_ 0': SAND (SP), fine to medium; tannish gray, Poorly USCS Graded, wet, with shell fragments, trace silt, 1 30 Calcareous. Mixed Zeogel mud at 41.8'. Set 6" 1.5': Gray, trace shell fragments. casing by own weight to 42.5'. 2 27 NOTE: Suspect thin limestone layers -44.8 3.0 from 47.8' to 55.3'. 3': SAND (SM), fine to medium; gray, wet, with shell fragments, Calcareous. 3 15 -46.3 4.5 4.5': CLAYEY SAND (SC), fine to medium; gray, wet, some shell fragments, Calcareous. 4 21 -47.8 6.0 6': CLAYEY SAND (SM), medium to coarse; gray, wet, with shell fragments, trace gravel, Calcareous 5 17 (Limestone gravel). 6 18 -50.8 9.0 9': SILTY GRAVEL (GM), fine to coarse; gray, wet, some shell fragments, trace clay, Calcareous 7 3 (Limestone gravel). 2 8 -53.8 12.0 12': SILTY SAND (SM), medium to coarse; light gray, wet, some gravel, Calcareous 9 11 (Limestone gravel). -55.3 🕇 13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -55.3 ft to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** EC-98-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES N 308123.36 E 2397870.261 EC-98-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/15/90 2/15/90 16. ELEVATION TOP OF BORING -46.6' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.6 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -46.6\_ 0': SILTY SAND (SM), medium to coarse; tannish USCS gray and light gray, wet, some shell fragments, trace 1 36 limestone fragments, calcareous. 1.5': Light gray, trace shell fragments, and limestone fragments. 2 32 3': Trace clay. 3.5': No clay. 3 30 4 38 5 49

6

BOTTOM OF BOREHOLE AT -55.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-55.6+

9.0

60

**Boring Designation** EC-99-90 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES EC-99-90 N 308983.8757 E 2397409.857 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 3/6/90 3/6/90 16. ELEVATION TOP OF BORING -47.1' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.1 James Arthur, Geologist N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) 0': SILTY SAND (SM), medium to coarse; light gray, -47.1<sub>-</sub> USCS wet, some gravel, Calcareous Set 6" casing to 47.1'. 1 26 (Limestone gravel). 1.5': Trace gravel, (Limestone gravel). 2 52 3 52 4 68 5 64 6 42 -56.1 <sup>–</sup> 9.0 BOTTOM OF BOREHOLE AT -56.1 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** FR-1-97 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 2 SHEETS 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL FR-1-97 N 344832.6955 E 2338043.209 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 12 12 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 6/10/97 6/10/97 -19.1' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 44.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 63.6 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -19.1-0': FAT CLAY (CH), dark gray, trace shale USCS fragments, calcareous. 0 0 -28.3 9.2 9.2': CLAYEY SAND (SC), fine; gray, trace shale fragments, calcareous. 2 0  $-32.1 \pm 13.0$ 13': 2 3 3 8 5 14.5': Light gray. 3 4 2 3 -35.1 ‡ 16.0 1 16': SAND (SM), fine; light gray, Poorly Graded, 2 trace shale fragments, calcareous. 5 2 5 3 17.5': SAND, fine to medium; non-calcareous. 4 5 11 6 3 5 11 6 5 6 7 15 8 22': Some shell fragments. 3 2 6 4 23.5': Light gray and dark gray. 4 5 11 6

**Boring Designation** FR-1-97 INSTALLATION **DRILLING LOG (Cont Sheet)** OF 2 SHEETS Charleston Harbor COORDINATE SYSTEM HORIZONTAL VERTICAL Charleston Harbor Entrance Channel Deepening State Plane NAD83 MLLW LOCATION COORDINATES **ELEVATION TOP OF BORING** N 344832.6955 E 2338043.209 -19.1'

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
	<u> </u>		16': SAND (SM), fine; light gray, Poorly Graded,					4	
] =	₽		trace shale fragments, calcareous. (continued)		7			5	10
1 -			•					5 5	
-	-							6	13
1 -	<b>₽</b>	·						7	
1 3	Ė	• [ + [	28': SILTY SAND, fine to medium; light gray, some					8	
1 3	Ė		shale fragments, calcareous.					10	20
-	<u> </u>	<b>.</b> † ] †						10	
] =	E		29.5': Trace shell fragments.		_			8	
-	<b>₽</b>				8			10 9	19
-	₽					1		5	
1 -	Ė	.						10	18
1 -	Ė		•					8	
1 =	Ė		•					8	
-	Ŧ l	┆┼┆┼						9	19
] =	<b>₽</b>	·				1		10	
1 -	<b></b>	. [   [	34': Some shell fragments.		•			7	4-7
-	<u> </u>				9			8 9	17
1 -	Ė I		35.5': Trace shell fragments.			1		5	
-	<b>=</b>		Co.S. Trade one magmente.					5	13
1 =	<b>₽</b>							8	
1 3	Ē I	[ <del> </del>						7	
] =	Ē I	.						8	19
1 -	<u> </u>					-		11	
1 -	<u>+</u>	•   •	38.5': Some shell fragments.		10			7 10	21
1 :	Ė	<b>         </b>			10			11	21
-	+					1		8	
=	<b>₽</b>	. [   ]						12	25
-60.6	41.5							13	
	፟		41.5': CLAYEY SAND (SC), fine; olive gray,					8	
1 :	<b></b>		calcareous.		11			12	24
] =	<u>+</u>					-		12	
1 3	‡				12			12 15	30
-63.6	 44.5				12			15	30
00.0	+ ++.0	_///	BOTTOM OF BOREHOLE AT -63.6 ft				BLOWS PER FOOT: Number required		

BOTTOM OF BOREHOLE AT -63.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** MP-39-88

						Boring Des	signation	MP-38	<u> 1-00</u>	
DRILLING LOG	DIVISION		NSTALL					SHEE		1
	South Atlantic Di		Char						1 sh	EETS
1. PROJECT  Charleston Harbor	Entrance Channel Dee	9. COORDINATE SYSTEM State Plane - South Carolina NAD83 VERTICAL MLLW								
	1	10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail								
2. HOLE NUMBER MP-39-88	LOCATION COORDINATES N 332660.6572 E 2	2353444.418	11. MAN Failir			R'S DESIGNATIO	N OF DRILL			
3. DRILLING AGENCY U.S. Corps of Engir	neers - Savannah Distri		12. TOT/	AL SA	MPLE 6	S D	ISTURBED 6	UNDIST	URBEE	)
4. NAME OF DRILLER C.D. Justiss		<u> </u>				R CORE BOXES	0	•		
5. DIRECTION OF BORING VERTICAL INCLINED	DEG FROM VERTICAL	BEARING	14. ELE\ 15. DATE			OUND WATER STARTE	NA D 3/2/88	COMPLETE 3/2	ED 2/88	
6. THICKNESS OF OVERBL	JRDEN 10.3'	· 1	16. ELE\	/ATIC	N TO	P OF BORING	-51.2' ML			
		1	17. TOT/	AL CC	RE R	ECOVERY FOR B				
7. DEPTH DRILLED INTO R	ock 0'					D TITLE OF INSPI		-		
8. TOTAL DEPTH OF BORII	NG 61.5'			Bob (		n, Geologist				
ELEV DEPTH	FIELD CLASSIFICATION (Descriptio		% REC	Samp No.	RQD %		REMARKS		Blows/ 0.5 ft	N-Value
-55.5 4.3				2						6
	: SANDY CLAY (CL), low p sticity, with shell fragments.			3						9
	: SANDY CLAY (CH), high sticity, with shell fragments,			4						11
				5						16
-61.5 + 10.3				6						14
BO'	TTOM OF BOREHOLE AT	-61.5 ft				BLOWS PER F	OOT: Numbe	r required		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** MP-40-88 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL MP-40-88 N 332196.9801 E 2355072.514 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 11 11 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/2/88 3/2/88 INCLINED 16. ELEVATION TOP OF BORING -35.7' MLLW 6. THICKNESS OF OVERBURDEN 15.6 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.3 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS **ELEV** DEPTH Samp **REMARKS** RQD % REC (Description) -35.7 0': SANDY CLAY (CH), high plasticity; green, high USCS 0 1 -36.3 0.6 plasticity, glauconitic. 0.6': SILTY SAND (SM), fine; dark gray, with shell 2 20 -37.8 2.1 2.1': CLAYEY SAND (SC), fine; dark green. 7 3 -39.3 3.6 3.6': SANDY CLAY (CH), high plasticity; green, high plasticity, with lenses of light green clayey sand. 18 4 5 13 -42.3<sup>-</sup> 6.6 6.6': CLAYEY SAND (SC), fine; green. 6 5 7 7 8 3 -46.8-11.1 11.1': SANDY CLAY (CL), low plasticity; green, low plasticity, glauconitic. 9 5 -48.3 + 12.612.6': CLAY (CH), green, with shell fragments, glauconitic. 10 12 11 10 -51.3<sup>+</sup> 15.6 BOTTOM OF BOREHOLE AT -51.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** MP-41-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL MP-41-94 N 331869.1668 E 2354454.213 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 6 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/21/94 8/21/94 INCLINED 16. ELEVATION TOP OF BORING -48.7' MLLW 6. THICKNESS OF OVERBURDEN 19.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 68.2 James Arthur, P.G. N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS **ELEV DEPTH** Samp REMARKS RQD % REC (Description) -48.7-0': SANDY CLAY (CL), low plasticity; fine; olive USCS gray, low plasticity, calcareous. 1 4 13 -51.7干 3.0 3': CLAYEY SAND (SC), fine; dark olive gray, calcareous. 2 22 22 23 -56.2± 7.5 7.5': SANDY CLAY (CL), low plasticity; fine; dark olive gray, low plasticity, calcareous. 3 19 9 11 4 14 12 15 -65.2 = 16.5 16.5': CLAYEY SAND (SC), fine to medium; dark olive gray, calcareous. 5 14 9 6 -68.2 = 19.5 BOTTOM OF BOREHOLE AT -68.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** RR-11-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-11-88 N 339480.2969 E 2346765.138 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/13/88 2/13/88 16. ELEVATION TOP OF BORING -41.6' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.6 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -41.6\_ 0': CLAY (CH), high plasticity; olive green, high USCS plasticity, with shell fragments, glauconitic, w/ 1 30 pockets of sand. 2 34 3 22 4': Dark green, slightly micaceous. 4 29 -47.1 -5.5 5.5': CLAYEY SAND (SC), fine; olive green, 5 -47.6 6.0 glauconitic, slightly micaceous. 6': CLAY (CH), high plasticity; dark green, high plasticity, micaceous w/ pockets of sand. 20 6 7 26

BOTTOM OF BOREHOLE AT -50.6 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.6

9.0

**Boring Designation** RR-12-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES RR-12-88 N 338914.4521 E 2347549.239 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/13/88 2/13/88 16. ELEVATION TOP OF BORING -41.4' MLLW 9' 6. THICKNESS OF OVERBURDEN 17. TOTAL CORE RECOVERY FOR BORING N/A 0' 7. DEPTH DRILLED INTO ROCK 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.4 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) **0':** CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, slightly sandy, w/ lenses of dark -41.4\_ USCS 1 36 grey, very loose sand. 1.5': Sandy. 2 28 3 23 4 24 5.5': Dark green and olive green. 5 21 6 17 -50.4 9.0 BOTTOM OF BOREHOLE AT -50.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** RR-13-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 9. COORDINATE SYSTEM 1. PROJECT VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES RR-13-88 N 338487.5636 E 2348110.315 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED : VERTICAL 15. DATE BORING 2/13/88 2/13/88 16. ELEVATION TOP OF BORING -40.2' MLLW 6. THICKNESS OF OVERBURDEN 10.3 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.5 Bob Green, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-40.2_ - -	<u>-</u>		0': No sample recovered.						
-41.5 - - - - - - -	_		1.3': CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, sandy, w/ lenses of dark grey, sand.		1				36
					2				33
					3				26
-			5.8': Interlayered dark green and olive green.		4				22
-					5				17
=	10.3		POTTOM OF POPULOUE AT 50.5 %		6				24

BOTTOM OF BOREHOLE AT -50.5 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** RR-14-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES RR-14-88 N 340364.225 E 2346436.981 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/14/88 2/14/88 16. ELEVATION TOP OF BORING -39.6' MLLW 6. THICKNESS OF OVERBURDEN 10.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.1' Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -39.6\_ USCS 0': CLAY (CH), high plasticity; olive green, high plasticity, glauconitic, slightly sandy. 1 28 0.5': Lenses of black, fat clay w/ shell fragments. 1.5': SANDY. 2 15 3 19 4.5': Dark green and olive green. 4 14 5 14 6 13

BOTTOM OF BOREHOLE AT -50.1 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

-50.1  $\pm$  10.5

7

22

**Boring Designation** RR-15-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division **Charleston Harbor** OF 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER LOCATION COORDINATES RR-15-88 N 341935.6253 E 2343363.711 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 4 4 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING

15. DATE BORING

16. ELEVATION TOP OF BORING

17. TOTAL CORE RECOVERY FOR BORING

18. SIGNATURE AND TITLE OF INSPECTOR

8. TOT <i>A</i>	-42.8 O': CLAY (CH), high plasticity; gray, high plasticity, with shell fragments, slightly glauconitic.						en, Geologist		
ELEV		LEGEND		% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
-	-		<b>0':</b> CLAY (CH), high plasticity; gray, high plasticity, with shell fragments, slightly glauconitic.		1		USCS		0
-			<b>2.7':</b> CLAYEY SAND (SC), fine; dark gray, with shelf ragments, glauconitic, strong sulpher odor	I	2				5
- -					3				0
-50.0					4				7

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BOTTOM OF BOREHOLE AT -50.0 ft

VERTICAL

7.2'

0'

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

2/14/88

-42.8' MLLW

N/A

COMPLETED

2/14/88

VERTICAL

6. THICKNESS OF OVERBURDEN

7. DEPTH DRILLED INTO ROCK

**Boring Designation** RR-16-88 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER : LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-16-88 N 343345.4057 E 2342287.467 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 2/14/88 2/14/88 16. ELEVATION TOP OF BORING -37.1' MLLW 6. THICKNESS OF OVERBURDEN 13.2 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50.3 Bob Green, Geologist N-Value Blows/ 0.5 ft EGEN FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.1\_ 0': CLAY (CH), high plasticity; gray, high plasticity, USCS with shell fragments, interlayered w/ poorly graded 0 1 7.2': End of sand layers. 2 6 3 0 4 20 -48.3 11.2 11.2': SAND (SP), fine to medium; gray, Poorly 5 Graded, with shell fragments, slightly clayey. 6 14 -49.8 🖵 12.7 12.7': CLAYEY SAND (SC), fine; gray. 7 -50.3 BOTTOM OF BOREHOLE AT -50.3 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** RR-17-94 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-17-94 N 336023.0262 E 2344820.825 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING COMPLETED ☑ VERTICAL VERTICAL 15. DATE BORING 8/17/94 8/17/94 16. ELEVATION TOP OF BORING -38.4' MLLW 6. THICKNESS OF OVERBURDEN 13.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 51.9 James Arthur, P.G. N-Value LEGEND Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.4\_ 0': CLAYEY SAND (SC), fine; dark gray, some silt, USCS trace shell fragments. 0 1 Used saltwater drilling mud beginning at 47.9 0 2 5 -51.9‡13.5 BLOWS PER FOOT: Number required BOTTOM OF BOREHOLE AT -51.9 ft to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** RR-19-97 INSTALLATION DIVISION **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL RR-19-97 N 344162.919 E 2339490.779 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL COMPLETED VERTICAL 15. DATE BORING 6/5/97 6/5/97 -11.4' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 44.8 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 56.2 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -11.4 0': CLAYEY SILT (MH), high plasticity; gray, high USCS plasticity, some sand, trace shells, calcareous. 0 -17.8 = 6.4 6.4': CLAY (CH), high plasticity; gray, high plasticity. 2 0 21.2': Trace sand, and silt, shell fragments. 3 0 27.1': Trace organics.

**Boring Designation** RR-19-97

								Burning Designation	<u> </u>	JI			
DDII	LINIC	10	C (Cant Chapt)	INS	STALL	ATIO	N		SHEET	2	2		
DKIL	DRILLING LOG (Cont Sheet)						Charleston Harbor						
PROJECT						COORDINATE SYSTEM : HORIZONTAL :							
Cha	Charleston Harbor Entrance Channel Deepening						ane	NAD83	. MI	LW			
LOCATI	ON COO	RDIN	ATES	EL	EVAT	ION T	OP O	F BORING	•				
N 34	14162.9	919	E 2339490.779	-	-11.4								
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)		% REC	Samp No.	RQD %	REMARKS		Blows/ 0.5 ft	N-Value		
			6.4': CLAY (CH), high plasticity; gray, high plasticity (continued)  32.3': CLAY, high plasticity; gray, high plasticity, trace organics.	<i>'</i> .		4					0		
	38.8					5					0		
-51.7	40.3		<b>38.8':</b> SILT (OL), dark grayish brown and dark brown, some organics, and clay, some sand.			6				0 0 8	8		
-53.2	41.8		<b>40.3':</b> SAND (SP), fine to medium; gray, Poorly Graded.			7				3 10 8	21		
			<b>41.8':</b> SILTY SAND (SM), fine to medium; dark brownish gray, trace clay.			8				0 6 8	14		
-56.2	44.8		<b>43.3':</b> SILTY SAND, medium to coarse; dark gray, trace clay.			9				4 3 6	13		

BOTTOM OF BOREHOLE AT -56.2 ft

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

**Boring Designation** SC-1-94 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL SC-1-94 N 338624.0551 E 2343574.82 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 3 3 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 8/17/94 8/17/94 16. ELEVATION TOP OF BORING -29.6' MLLW 6. THICKNESS OF OVERBURDEN 22.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 52' 8. TOTAL DEPTH OF BORING James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -29.6 0': CLAYEY SILT (MH), dark gray to black, some USCS 0 1 0 <u>-47.5‡</u> 17.9 17.9': WELL GRADED GRAVEL CLAYEY SAND (SC), fine; dark gray to black, some silt. 2 4 0 20.9': Fine to medium; shell fragments. 3 8 <u>-52.0 + 2</u>2.4 BOTTOM OF BOREHOLE AT -52.0 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** SR-1-89 INSTALLATION DIVISION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 11. MANUFACTURER'S DESIGNATION OF DRILL 2. HOLE NUMBER : LOCATION COORDINATES SR-1-89 N 346123.6893 E 2334645.032 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C. Robbins 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 3/29/89 3/29/89 -38.9' MLLW 16. ELEVATION TOP OF BORING 6. THICKNESS OF OVERBURDEN 13.3' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 52.2 Matthew Delano, Geologist N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -38.9\_ 0': FAT CLAY (CH), black, wet, with sand. USCS 0 11.8': FAT CLAY, high plasticity; dark bluish gray, high plasticity, trace sand, slightly calcareous. 2 12 -52.2 13.3 BOTTOM OF BOREHOLE AT -52.2 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-11-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 345863.3364 E 2331270.099 TWR-11-90 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/30/90 1/30/90 16. ELEVATION TOP OF BORING -37.7' MLLW 6. THICKNESS OF OVERBURDEN 21' 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 58.7 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS DEPTH ELEV Samp REMARKS RQD % REC (Description) -37.7-0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 1 <u>-43.7</u>‡ 6.0 6': SILTY SAND (SM), fine to medium; dark gray to black, wet, trace clay. 2 5 7.5': SAND, fine; dark gray, trace shell fragments. 0 3 9': SAND, medium to coarse; with shell fragments, and wood. 4 4 5 9  $-49.7 \pm 12.0$ 12': CLAYEY SAND (SC), fine; dark gray, wet, some shell fragments. 6 0 -51.2 \pm 13.5 13.5': FAT CLAY (CH), dark gray, wet, some sand. 7 0 15': Trace shell fragments. 8 5 16.5': No shell fragments. 0 9 4 -58.7 ‡ 21.0 BOTTOM OF BOREHOLE AT -58.7 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance with the Unified Soil Classification System hammer falling 30".

**Boring Designation** TWR-12-90 DIVISION INSTALLATION **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL N 345449.3842 E 2331502.166 TWR-12-90 Failing 314 12. TOTAL SAMPLES 3. DRILLING AGENCY DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING VERTICAL COMPLETED ✓ VERTICAL 15. DATE BORING 1/26/90 1/26/90 16. ELEVATION TOP OF BORING -32.9' MLLW 6. THICKNESS OF OVERBURDEN 22.5 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.4 James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -32.9-0': CLAYEY SILT (MH), dark gray to black, wet. USCS NOTE: Part of sample #1 taken from 0 1 <u>-46.2</u> 2 13.3': SILTY SAND (SM), fine; dark gray, wet, some 2 shell fragments, trace clay. 3 0 9 -49.4 ± 16.5 16.5': SAND (SP), medium; gray, Poorly Graded, wet, with shell fragments, trace silt. 4 0  $-50.9 \pm 18.0$ 18': SILTY SAND (SM), fine to medium; dark gray, wet, with shell fragments. 5 9 6 2 -53.9 🕇 21.0 21': CLAYEY SAND (SC), fine to medium; dark gray, wet, trace shell fragments. 7 11  $-55.4 \pm 22.5$ BOTTOM OF BOREHOLE AT -55.4 ft BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. NOTE: Soils visually field classified in accordance hammer falling 30". with the Unified Soil Classification System

**Boring Designation** TWR-13-90 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor 1 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail 2. HOLE NUMBER LOCATION COORDINATES 11. MANUFACTURER'S DESIGNATION OF DRILL TWR-13-90 N 345439.3017 E 2331047.171 Failing 314 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 C.D. Justiss 14. ELEVATION GROUND WATER NA 5. DIRECTION OF BORING DEG FROM BEARING ☑ VERTICAL VERTICAL COMPLETED 15. DATE BORING 1/26/90 1/26/90 16. ELEVATION TOP OF BORING -39.1' MLLW 6. THICKNESS OF OVERBURDEN 16.4 17. TOTAL CORE RECOVERY FOR BORING N/A 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 55.5' James Arthur, P.G. N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS ELEV **DEPTH** Samp REMARKS RQD % REC (Description) -39.1\_ 0': CLAYEY SILT (MH), dark gray to black, wet. USCS 0 9.3 -48.4 2 9.3': SILTY SAND (SM), fine; dark gray, wet, some 2 shell fragments, trace clay. 9.5': Trace shell fragments. 3 10 -50.1<u>+</u> 11.0 11': SAND (SP), fine; gray, Poorly Graded, wet, trace shell fragments. 4 5 12.5': No shell fragments. 5 11 6 12 7 23 -55.3 16.2 -55.5 16.4 8 16.2': LEAN CLAY (CL), olive green, moist, some BLOWS PER FOOT: Number required sand, trace shell fragments, calcareous. to drive 1-3/8"ID splitspoon w/140 lb. BOTTOM OF BOREHOLE AT -55.5 ft hammer falling 30". NOTE: Soils visually field classified in accordance with the Unified Soil Classification System

**Boring Designation** WRB-20-81 DIVISION INSTALLATION SHEET **DRILLING LOG** South Atlantic Division Charleston Harbor OF 2 SHEETS 1. PROJECT 9. COORDINATE SYSTEM VERTICAL Charleston Harbor Entrance Channel Deepening State Plane - South Carolina NAD83 MLLW 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon w/ 5 1/2" Fishtail LOCATION COORDINATES 2. HOLE NUMBER 11. MANUFACTURER'S DESIGNATION OF DRILL WRB-20-81 N 337031.463 E 2340488.892 CME 45 3. DRILLING AGENCY 12. TOTAL SAMPLES DISTURBED UNDISTURBED U.S. Corps of Engineers - Savannah District 6 0 4. NAME OF DRILLER 13. TOTAL NUMBER CORE BOXES 0 Perry Roundtree 5. DIRECTION OF BORING
VERTICAL 14. ELEVATION GROUND WATER NA DEG FROM BEARING COMPLETED : VERTICAL 15. DATE BORING 5/22/81 5/22/81 16. ELEVATION TOP OF BORING -14' MLLW 6. THICKNESS OF OVERBURDEN 36' 17. TOTAL CORE RECOVERY FOR BORING 7. DEPTH DRILLED INTO ROCK 0' 18. SIGNATURE AND TITLE OF INSPECTOR 8. TOTAL DEPTH OF BORING 50' Thomas W. Scott N-Value Blows/ 0.5 ft FIELD CLASSIFICATION OF MATERIALS % REC DEPTH Samp N ELEV REMARKS RQD % (Description) -14 0': ORGANIC SILT (OH), black. USCS 0 -30.0 <del>+</del> 16.0 16': CLAYEY FAT SILT (MH), green. 1 2 14 14

**Boring Designation** WRB-20-81

DRILLING LOG (Cont Sheet)		INSTAL			- ul	SHEET 2				
PROJECT					INATE		arbor TEM : HORIZONTAL	OF 2 SHEETS : VERTICAL		
	Har	bor Entrance Channel Deepening				NAD83				
					e Pla	MLLW				
l	LOCATION COORDINATES					IOF O	DONING			
N 337031.463 E 2340488.892							I			
ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value	
-			16': CLAYEY FAT SILT (MH), green. (continued)							
=					2				12	
-	_		22': With gravel.			1				
-					3				10	
-	_		23.5': CLAYEY FAT SILT.							
-					4				17	
=	-								16	
-	_									
=	_								17	
=	<u>-</u> - -								18	
									10	
- - - - -									23	
=									17	
=					5				16	
					6	-			18	
-50.0	36.0		BOTTOM OF BOREHOLE AT -50.0 ft				BLOWS PER FOOT: Number requ	uired	$\dashv$	
			NOTE: Soils visually field classified in accordance				to drive 1-3/8"ID splitspoon w/140	lb.		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System BLOWS PER FOOT: Number required to drive 1-3/8"ID splitspoon w/140 lb. hammer falling 30".

hammer falling 30".